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## CMR MARKET INDEX

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| CHEMICAL MARKETING REPORTER's market index of chemicals and related materials (100=1974 average), based on 97 key commercial chemicals, appears alongside with data for two weeks ago, last month and last year. |        |
| Dec. 5, 1986   | 153.12 |
| Nov. 28, 1986  | 151.83 |
| Nov. 7, 1986   | 152.33 |
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## CHEMICAL MARKETING CUES

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| PVC: As environmental concerns moderate suppliers expect a further increase in consumption | Page 9  |
| ASPIRIN: International Trade Commission will note this week on an anti-dumping petition    | Page 22 |
| PARAFFINS: Observers believe penetration of LAB-based surfactants has nearly peaked        | Page 54 |

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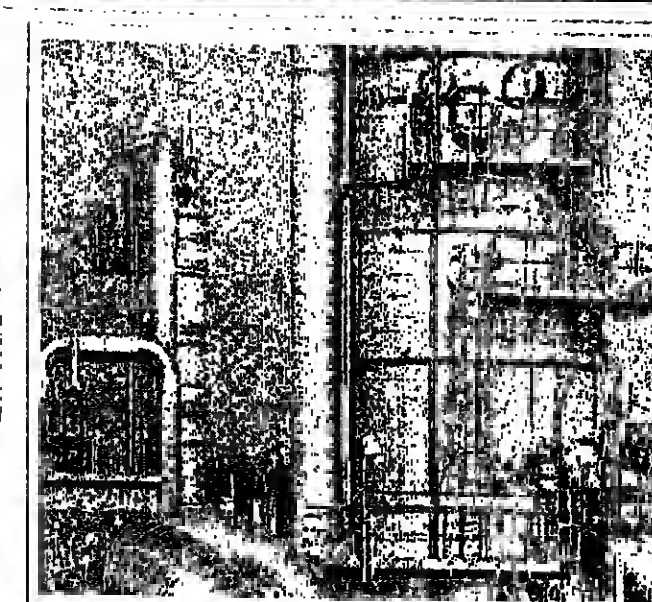
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Maleic Outlook

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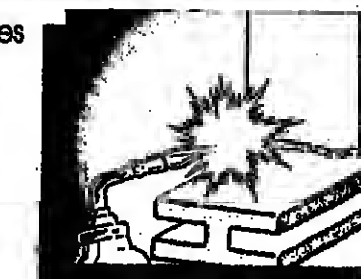
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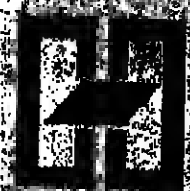
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## Maleic Balance Is Predicted

Monsanto Chemical Company plans a 20-million-pound-per-year debottlenecking project at its maleic anhydride plant in Pensacola, Fla. Producers say that healthy demand rate should enable Monsanto's new capacity and a planned expansion by Denka Chemical Corporation to be readily absorbed by the market.

The debottlenecking will move Monsanto's capacity to 10 million pounds per year by the end of 1988. This will be the first phase of a plan to increase capacity to 20 million pounds by 1990.

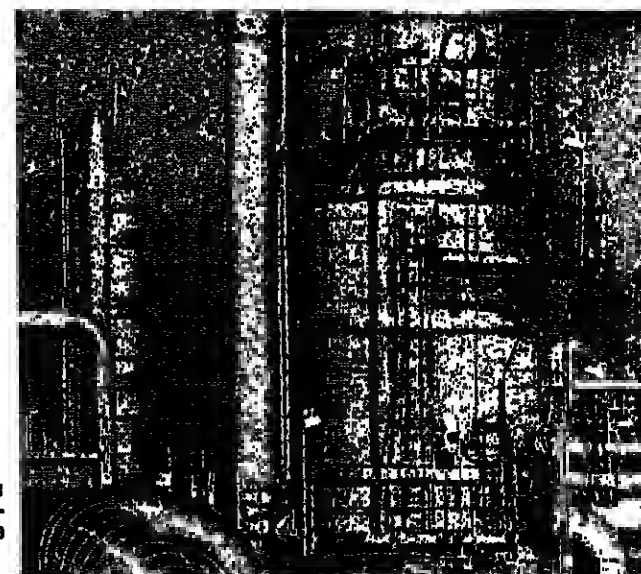
Denka plans to add 20 million pounds to its 50-million-pound-per-year facility in Houston by next May. "It's a pretty healthy market," says a company spokesman, and "we expect normal growth of our demand with maleic acid and our customer base to take care of our expansion."

Producers say that overall demand has grown this year at a 3 to 4 percent, GNP-style rate, and they expect this rate to be maintained for the foreseeable future. Monsanto estimates that the present consumption rate is between 365 million and 370 million pounds per year in an industry with a capacity of 383 million pounds per year.

Projecting a 4 percent consumption growth rate to the end of 1988, three-fourths of Monsanto and Denka's combined new capacity would satisfy the higher demand level, with industry capacity reaching 423 million pounds per year.

Continued on Page 13

**MONSANTO AT PENSACOLA:** The company has completed a 200-million-pound-a-year debottlenecking project here. It's expected that the new capacity will be readily absorbed by the market.



## SmithKline Enters Accord on Heart Drug Development

SmithKline Beckman Corporation and Boehringer Mannheim have agreed to collaborate on the worldwide development and marketing of new cardiovascular drugs discovered by Boehringer Mannheim. Terms of the preliminary agreement were not disclosed.

Under the accord, the two firms will form a series of individual partnerships in which each will have responsibility for development and marketing in the US and Europe.

The two companies may co-market certain products in the US and other major markets, according to SmithKline.

SmithKline will focus on clinical development and marketing of several products, including carvedilol, a vasodilator beta-blocker to treat mild to moderate hypertension and angina.

According to SmithKline Beckman, the drug's balance of vasodilation and beta-blockade will make it possible to treat patients who do not respond to current beta-blocker therapy, such as those with both hypertension and peripheral vascular disease.

The drug is said to be well advanced in clinical trials in many world markets, including the US. An application for marketing approval in Germany will be submitted this month, while applications in other European

countries may begin in 1988. It is anticipated that an application for marketing approval will be submitted to US regulatory authorities in 1988.

The companies will also concentrate on development of thromboxane receptor antagonists. Two compounds are in clinical evaluation in Europe and will enter clinical trials in the US next year.

These compounds are described as a new class of medicines that inhibit platelet aggregation. They will be used to treat acute myocardial infarction (heart attack), coronary artery disease, and possibly renal and peripheral vascular disease, according to SmithKline.

Curt Engelhorn, chairman of Boehringer Mannheim, said last week that the agreement with SmithKline will "allow for the expeditious development and worldwide commercialization of compounds from our research." He added that the agreement provides his company with "the opportunity to establish a major pharmaceutical presence in the US."

Henry Wendi, president and chief executive officer of SmithKline, said his firm has been "impressed" by Boehringer's cardiovascular medicine research. "Their R&D effort and investment are significant and dovetail well with our own discoveries and development activities," he said.

## Petainer SA Ends License Agreement with Coca-Cola

Petainer SA, the European owner of the Petainer plastic container systems are in place, so that biodegradability isn't a necessary requirement.

Since that time, Petainer Development Company has begun start-up and debugging tests of its Atlanta can development plant.

Because Petainer Development Company believes that a practical recycling plan has been developed and can be implemented and improved only by further testing, Petaloer is terminating its license to Coca-Cola, and intends to explore other possibilities.

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## Shintech's K-Bin Enters PVC Field

Last week, Shintech Incorporated announced that K-Bin Incorporated, its new wholly-owned subsidiary (CMR, 9/22/88, page 45) has begun commercial production of plastic molding compounds.

These products will serve the growing PVC bottle industry, rigid film and sheet manufacturing and profile extrusion applications.

Chihiro Kanagawa, president and CEO of Shintech, a leader in the PVC resin business, announced that the K-Bin operation represents

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## Beta Carotene Market Expands As New Uses, Producers Appear

Boostered by promises of new applications in pharmacology, the beta-carotene market continues to expand. Producers of both synthetic and natural beta-carotene are confident that research reports connecting the product with anti-cancer properties as well as uses as a safer alternative to vitamin A will increase demand in the future. Some sources put yearly sales at about \$10 million to \$15 million (some put figure as high as \$25 million) and one very optimistic source expects the market to grow to \$100 million by the end of the decade.

Right now, the big players are still the producers of synthetic beta-carotene, Hoffmann-La Roche Inc. and BASF Corporation. The market share for the natural product is relatively limited.

Cyanotech Corporation in Woodinville, Wash., is offering an all natural beta-carotene derived from algae grown in ponds in Hawaii. According to Dan Anderson, technical director in charge of new products there, production capacity has been about 300 kilos per month since June of this year. Production is expected to triple by next February.

Mr. Anderson says his company makes a 7.5 percent powdered product, at present the most potent of the natural products on the market. It sells for about 80 to 85 percent above the price for the synthetic product.

As previously reported, Eastman Kodak Company and Microbio Resources Inc. have concluded an agreement giving Kodak's bioproducts division the market marketing rights to Microbio's "Provatene", adding another producer of natural beta-carotene from algae to the market.

According to a spokesman for Microbio, "Provatene" is derived from algae.

Continued on Page 20

## Chinese Slate Ammonia Plant

M. W. Kellogg Company will provide process technology for a new 800-metric-ton-per-day ammonia plant to be constructed in Sichuan, in the People's Republic of China.

The \$50-million facility will be constructed by Sichuan Chemical Works and is scheduled to start production in late 1988.

According to Kellogg, ammonia plants based on its technology consume less than 25 million Btu's for each short ton of ammonia produced, or about 75 percent of the Btu's used in conventional ammonia production. The plants also use only half the fuel required for conventional plants.

Kellogg says the Chinese plant will be designed to be even more energy efficient than other units based on its technology.

## PMA Priority To Be Patents

The president of the Pharmaceutical Manufacturers Association said last week that the drug industry will give priority to gaining stronger patent protection for its products in Mexico, Argentina, Brazil, Taiwan, India, and Indonesia.

Gerald J. Mossinghoff told a colloquium on intellectual property of the National Research Council, National Academy of Sciences, that legislation already is pending in Korea and Canada to give pharmaceuticals stronger patent protection. The association has worked closely with the current Administration on intellectual property protection issues, he says.

Mr. Mossinghoff says Pharmaceutical Manufacturers Association has identified 26 countries where protection for intellectual property is inadequate or lacking altogether.

"Many of these countries now host growing national pharmaceutical industries that are... fully capable of exploiting the lack of protection for the patent holder," Mr. Mossinghoff says. "We are now facing situations worldwide where the annual loss of revenue runs into hundreds of millions of dollars."

Mr. Mossinghoff is a former U.S. Commissioner of Patents and Trademarks.

## BP PVC Compounder Acquired by Vista

BP Performance Polymers Inc. has signed a letter of intent to sell its PVC compound business to Vista Chemical Company, Houston, Tex. Price of the transaction was not disclosed.

The sale includes a 12-acre site at Mansfield, Mass., know-how, formulations, approvals and BP PPI's current customer list for PVC compounds. BP PPI will continue to manufacture a range of PVC compounds at its Visalia, Calif., plant for Vista.

BP PPI will act as sales and marketing agent for PVC compounds to several wire and cable accounts on Vista's behalf in addition to pursuing its main business in the manufacture and supply of polyethylene polymer compounds to the wire and cable, telecommunications and automotive industries.

The transaction is expected to be completed by the end of January 1987. BP PPI announced on September 10th its plans to expand its polyethylene business in the US by making substantial investments for extra-

Continued on Page 23

## Canadian Argon Unit Is Under Construction

Canadian Oxygen Limited, sister company of Airco Industrial Gases, is building a new argon recovery plant in Courtwright, Ontario. The argon will be marketed in the US by Airco, and will also be sold in Eastern Canada.

The plant is scheduled to begin production in January 1988 and will have a daily production capacity of 34 tons of high-purity argon. The facility will use cryogenic technology to recover argon from ammonia plants, while returning increased quantities of hydrogen and nitrogen to the ammonia unit.

The new plant, designed and constructed by Cryoplants, is being built next to C-I-L Inc.'s ammonia plants from which Canadian Oxygen will draw feed gas for argon production.

## Turkish Aspirin Seen Hurting US

International Trade Commission issued a preliminary ruling last week that imports of aspirin from Turkey may be injuring domestic producers.

As a result, Commerce Department will continue countervailing and antidumping investigations prompted by complaints that several Turkish producers are selling their product in the US at less than fair value.

The investigations were launched after Monsanto Company filed a petition with the government October 31. Monsanto charged that the government of Turkey was subsidizing Turkish producers, giving them an unfair advantage in the US market.

Monsanto also accused the Turkish companies of selling product in the US at unfairly low prices. The complaints are also supported by Dow Chemical Company.

## Borden Expands At Fayetteville, N.C.

Borden Chemical Domestic and International, Division of Borden Inc., says it will build a \$10 million expansion to its facility in Fayetteville, N.C. The plant produces urea and phenolic resins for the forest products industry.

Borden says the increased capacity is intended to help meet growing demand in the Southeast for resins used as binders in the manufacture of particleboard, plywood and structural board.



Edward E. Barr

## Sun Chemical Sells Printing Inks Unit

The largest graphic arts materials company in the world is about to be formed, according to Sun Chemical. It will result from the purchase for \$550 million of Sun Chemical Corporation's printing inks and pigments operations by Dainippon Inks & Chemicals, Inc. of Tokyo, Japan. This is thought to be the largest single investment in an American company by a Japanese firm.

Edward E. Barr has been named president and chief executive officer of the reconstituted company, which will retain the Sun Chemical name and operate from headquarters in Fort Lee, New Jersey. Mr. Barr thus returns to the company whose presidency he left in 1982.

In 1988, Sun Chemical's General Printing Ink & Pigments divisions, and its international counterparts, are expected to have revenues in excess of \$600 million. For 1987, sales are projected at \$500 million, following an anticipated consolidation with other DIC graphic arts materials operations. These include the American printing ink company, Kohn & Madden, and the German ink manufacturer, Hartmann International.

The new Sun Chemical claims it will be the largest company of its kind in North America and Europe and will have a significant market presence in Latin America and Australasia.

## Pfizer Inc. Obtains Rights to Additives

Pfizer Inc. says it has signed a licensing agreement that gives it worldwide marketing rights to Polar Molecular Corporation's patented additive for gasoline and distillate fuels. Pfizer also has an option to acquire an equity interest in PMC.

Based in Saginaw, Mich., PMC has focused its research and development activities on products for the automotive and energy-related industries. Its primary product, "DurAlit", a non-metallic fuel additive, was deemed "substantially similar" by the Environmental Protection Agency earlier this year. The action by the EPA means that "DurAlit" can be legally used by refiners to bulk treat unleaded fuel.

"DurAlit", a potential replacement for tetraethyl lead, addresses many of the issues confronting refiners today, including the

Continued on Page 31

## Tenneco Unit in Pact

Tenneco Inc. said last week that it has reached agreement with major creditors for restructuring of Poclain SA, French-based manufacturer of hydraulic excavators in which it holds 44 percent ownership. The restructuring, Tenneco said, is expected to enable Poclain to return to profitability through cost-reductions and other operating efficiencies. Under the agreement, Tenneco will issue a new series of securities stock to Poclain's major creditors in exchange for the French franc equivalent of approximately \$80 million of Poclain's debt obligations.

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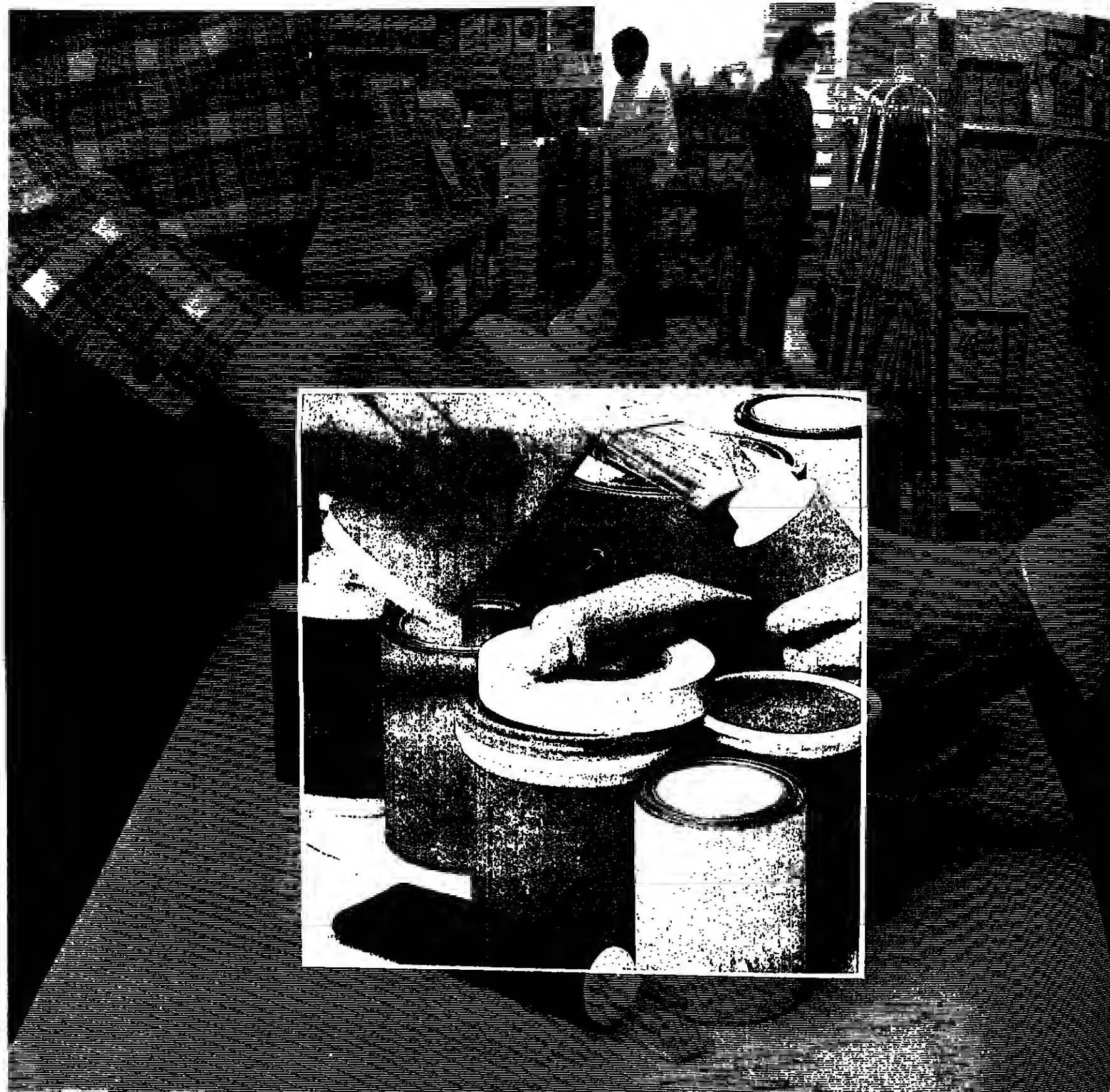
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**SELECTS EXECUTIVES:** Paul E. Freiman (left) has been elected president and chief operating officer and Thomas L. Gutshel executive vice-president of Syntex Corporation, effective January 1, 1987. Mr. Freiman will be responsible for the company's worldwide pharmaceutical and agricultural operations. Mr. Gutshel will continue to be responsible for managing the company's chemical and engineering services operations and will join the company's executive committee.

## Monsanto's Nitro Plant Cited by US Agency

The Occupational Safety and Health Administration last week cited Monsanto Corporation's plant in Nitro, W. Va., for 11 alleged instances of willfully violating the company's record-keeping requirements and proposed penalties totalling \$5,000.

The OSHA citation also proposed a \$5,000 fine for each alleged failure to properly maintain records of injury and illnesses for the past two years. The plant employs 100 workers in the production of agricultural chemicals.

The citation indicates an ongoing pattern of on-the-job injuries and illnesses. OSHA indicates an ongoing pattern of on-the-job injuries and illnesses. OSHA indicates an ongoing pattern of on-the-job injuries and illnesses.

The citation also includes several instances of injuries that required medical attention, restricted work activity or lost time, and, in some cases, workers' compensation claims, according to Mr. Pendergrass.

The OSHA inspection of the Nitro plant was initiated in June following a worker complaint. The agency has cited the Monsanto plant for record-keeping violations on three separate occasions in the past.

A Monsanto spokesman says the company plans to investigate the 11 instances cited by OSHA and will appeal them if warranted. "The company and the employees acted in good faith," he says. "We give top priority to the health and safety of all our employees."

In a separate action, OSHA cited USX Corporation's coke works' ammonia plant at Clairton, Pa., for 98 alleged willful record-keeping violations and proposed \$130,000 in penalties.

The agency cited 60 alleged instances of willfully failing to record cases of lost workdays or restricted work activity, and 38 instances of willful failure to record, or of improperly recording, medical treatment cases.

The citations follow recent similar action by OSHA against several other companies for alleged record-keeping violations.

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## Oil Fee Is Urged in Study as Imports Hit 5 Million Barrels

A study by the Congressional Budget Office last week urged a new tax on imported oil to help pay for the country's energy needs and national security, a new Harvard University study warned last week.

The study says that imports are averaging over 5 million barrels per day — the highest level since 1973 — as lower prices have triggered a surge in overall consumption and domestic production.

The study calls for the immediate imposition of a \$10 a barrel tariff on all imports of oil, and a corresponding fee on imported refined products, in an effort to reduce dependence on foreign oil.

The chemical industry testified against an import fee in congressional hearings earlier this year, and the Petrochemical Energy Institute recently reaffirmed its opposition to a fee imposed by the Department of Energy.

The request of President Reagan, DOE is studying the national security implications of increasing petroleum imports.

The chemical industry argues that raising the price of oil will not increase domestic production. It says a new fee or tax would hurt economic growth, devastate the industry and plastics industries and cost hundreds of thousands of Americans their jobs.

G. Broadman and William W. Hogan of the Energy and Environmental Policy Center, charges that the market price currently paid for imported oil by US consumers does not reflect the true cost of dependence on insecure sources of oil supply.

"Our proposed fee should be thought of as an insurance policy against the risks of future disruptions from the Middle East," the authors say.

Impositions of a large fixed fee on imports, which would be matched by increases in the price posted by US producers, would reverse the trends in overall consumption and domestic production. The study calculates that the tariff required to bring about an "optimal" level of US oil imports is between \$10 and \$11 a barrel.

"Rather than advocating protectionism for the US oil industry, what we are calling for is protection for the consumers against future oil shocks," the authors say.

Because the market price of US oil imports does not reflect the total cost, more oil is used by consumers than is optimal, the study notes. Similarly, the amount of oil produced in the United States is less than optimal.

The Reagan Administration has so far resisted calls for a tariff on the grounds that it would be inconsistent with its free market policy. The Harvard study, co-authored by Harry

## Du Pont to Sell Sodium Silicate Unit

E.I. du Pont de Nemours & Co. last week announced plans to sell its sodium silicate business to Power Silicates Inc., a subsidiary of Power International Limited of Melbourne, Australia. The merchant silicate business, while mature and relatively flat over the past several years, has recently been showing growth potential in a number of areas.

Du Pont's proposed sale includes company patents, technical know-how, marketing information, inventories and manufacturing facilities in Augusta, Ga., Fortville, Ind., and Pleville, La. Du Pont will continue to produce sodium silicates for internal use at its East Chicago, Ind., plant.

The three plants being sold have a combined capacity of about 70,000 tons per year of anhydrous and liquid sodium silicates. The East Chicago plant can make up to 35,000 tons per year.

Du Pont has internal applications for silicates in the production of its "Ludox" colloidal silica, titanium dioxide stabilization, and the production of silicic acid. The company, through a joint venture with EKA AB of Sweden, is building a plant in Augusta, Ga., that will produce silicic acid.

Du Pont says the sale to Power Silicates is scheduled to be completed by the end of this month. Du Pont will continue to be involved

involved in production for at least another six months, however.

Du Pont says sodium silicates represent less than one-tenth of one percent of the company's sales.

Continued on Page 30



David S. Hollingsworth, who has been named to succeed Alexander F. Glacco as chairman and chief executive of Hercules Inc.

## Nickel Embargo's End Declared by Sec. Baldrige

The US and the Soviet Union have reached an agreement that is expected to end the embargo on US imports of Russian nickel, says Commerce Secretary Malcolm Baldrige.

Secretary Baldrige announced the agreement in principle with Soviet Foreign Trade Minister Boris Aristov after two days of talks were concluded between members of the joint US-USSR Commercial Commission, a panel set up in the early 1970's to improve relations between the two nations.

The Treasury Department, which administers the embargo, has accepted the Soviet invitation to enter into immediate negotiations with representatives of the Soviet government to work out the specifics of the deal, according to Secretary Baldrige.

The US produces no pure unwrought nickel and is 100 percent dependent on imports.

Secretary Baldrige also says the two sides have agreed to give American companies better access to Soviet enterprises in areas such as chemicals, food processing, iron ore

beneficiation, coal slurry pipelines and irrigation equipment.

"This will not by itself necessarily guarantee US sales, but it will continue the process of improving American access to the Soviet market that we began last year," says Secretary Baldrige.

The secretary says all of these projects will be compatible with US and multinational technology transfer controls. The Soviets are expected to ease regulations which currently prohibit US companies from engaging in joint ventures with state-controlled enterprises.

Secretary Baldrige and Minister Aristov also agreed to hold the next session of the Joint Commercial Commission in Moscow next year.

"I look forward to its contribution to the expansion of our trade and to better US-Soviet relations generally," says Secretary Baldrige. "Both President Reagan and General Secretary Gorbachev feel that trade can be one of the elements leading toward improved relations."

## Grace Finds Trichloroethane Has Contaminated Two Wells

W.R. Grace & Co. told the Maryland health department last week that a routine inspection of its Columbia, Md., research laboratory revealed amounts of trichloroethane in excess of Federal environmental standards.

Grace said the tests showed that TCE equaled 50 to 380 parts per billion in two of 13 wells at the facility. Environmental Protection Agency says amounts exceeding 5 parts of TCE per billion are unsafe.

The source of the contamination has not been determined yet, although the company and state and county health officials are investigating. TCE is a cleaning agent primarily used to remove grease from machinery and is one of the more common pollutants found in US waters.

A Grace official said the Columbia wells were free of the chemical when they were checked in September. The wells are tested twice annually for certain contaminants, and weekly or daily for others.

Local health officials are testing the wall water of houses in a surrounding residential

area. An initial study of the wells at the research laboratory and the surrounding area indicated that widespread contamination is unlikely because a third well located downhill from the polluted wells showed no traces of TCE.

According to a spokesman for the Maryland Office of Environmental Programs, the state may order Grace to conduct a full environmental inspection of the Columbia facility. The laboratory is the company's headquarters for engineering, biomedical and biotechnical research.

The facility is licensed by the state to store hazardous substances, including TCE.

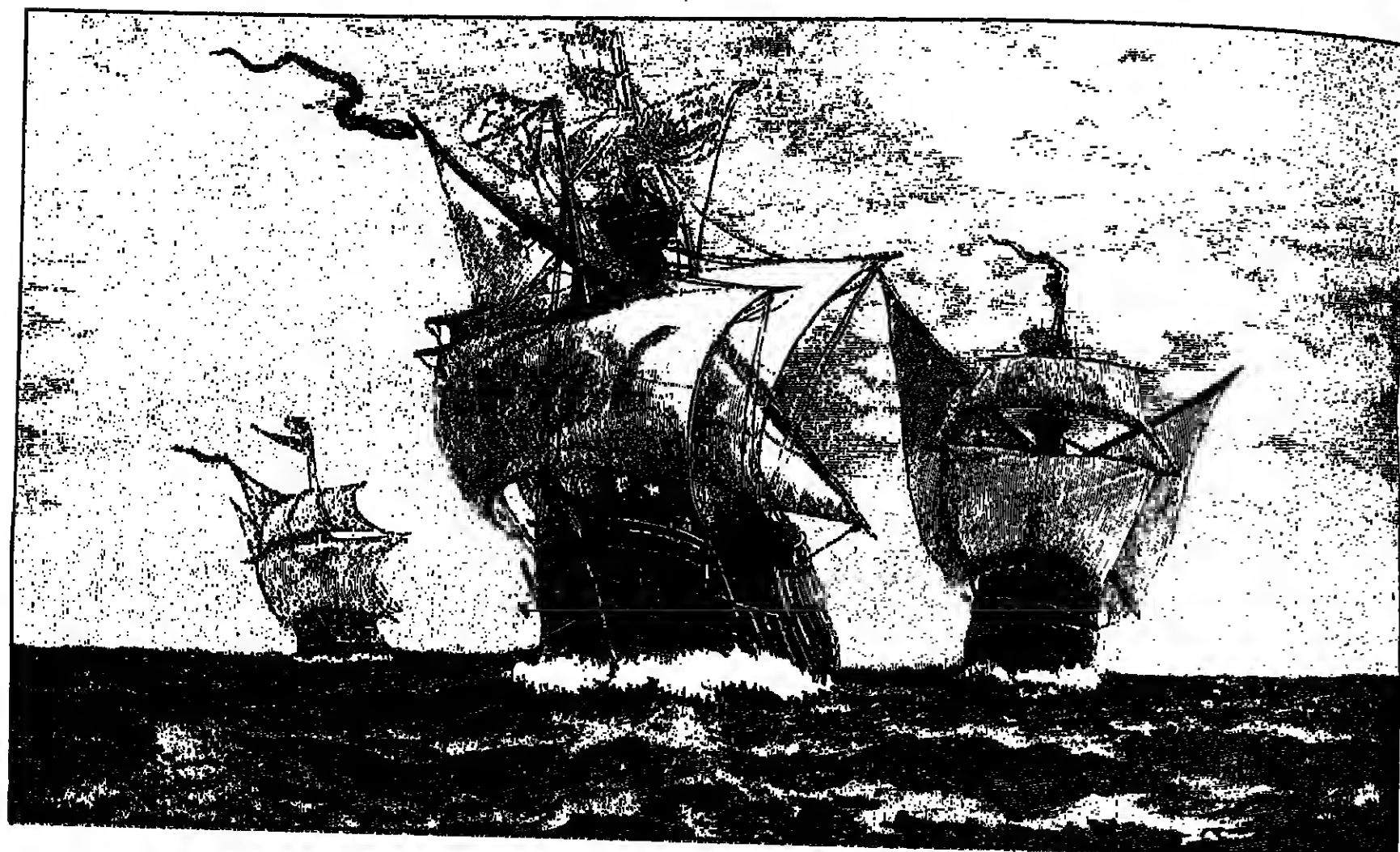
## Chevron Doubling

Chevron Chemical Company announced last week that it plans to more than double the capacity of its normal alpha olefin plant at Cedar Bayou, Tex. The company says it will build a 300-million-pound-per-year facility to be brought on stream in 1990. The unit will be designed to be expandable to 500 million pounds per year.

John C. Ito



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N-Benzoyl L-Valine  
L-Aspartic Acid, β-Benzyl Ester

L-Tyrosine Benzyl Ester  
p-Toluenesulfonate  
Benzyl Chloroformate  
p-Nitrobenzyl Chloroformate  
Trichloroethyl Chloroformate  
Isobutyl Chloroformate  
Secondary-butyl Chloroformate  
Ethyl Chloroformate  
Pivaloyl Chloride

Carbonyl Diimidazole  
Diisopropylethylamine  
N-(Benzyloxycarbonyloxy)succinimide  
Amino Acid NCA's (N-Carboxyanhydrides)  
Dipeptides



### News Capsule

#### Oil Resources Bid

Gulf Resources & Chemical Corporation dropped its bid for Imperial Continental Oil Association last week after UK authorities said the proposed acquisition would be subject to regulatory review that could take up to five months. The company is said to be considering a re-bid, among other options.

#### Marion Application

Food & Drug Administration has approved Marion Laboratories Inc.'s new application (NDA) supplement for 90 mg and 135 mg "Cardizem" angina tablets. The company plans to introduce the new dosage forms in the first quarter of next year. The drug is currently available in 30 mg and 60 mg tablets.

#### Amex Consolidates

Amex Inc. says it will consolidate all its research and development activities at its research laboratory in Golden, Colo. The move will begin immediately and will involve the gradual movement of research programs currently being carried out at the Ann Arbor, Mich., research laboratory.

#### Pharm Expands Program

Pharmaceutical Manufacturers Association will expand its communications efforts to help the pharmaceutical industry increase public understanding of its products, services and contributions to health care, the trade group says.

#### TVA Cuts Work Force

Tennessee Valley Authority plans to restructure its fertilizer plant operating force at Lake Mead, Ala., by about 50 workers. The agency is asking for volunteers for early retirement. "The distressed fertilizer market is forcing us to make these cuts," TVA says.

#### Phibro Plans Investment

Phibro Energy is reportedly negotiating an agreement to become a joint venture partner with Petroquímica Austral Argentina in a methanol project at Rio Grande, Tierra del Fuego. Phibro Energy, a subsidiary of Phibro Inc. in New York, trades a variety of petrochemicals, including ethanol.

#### Gas Recovery

Production and sale of gas began November 21 at the first landfill gas recovery facility in Texas, it was announced by EGS Energy Inc. The processed methane gas, which is the principal component of natural gas, is being sold to the Houston Gas Co., a subsidiary of Enron Inc. The gas processed at the plant will meet the annual energy needs of 18,000 households in the Houston area.

#### Harshaw/Filtrol Acquires

The Harshaw/Filtrol Partnership of Cleveland, Ohio, says it has acquired a line of special finishing chemical products, formulas and trade names from MacDermid of Bristol, Inc. of Plymouth, Conn. for an undisclosed price. The MacDermid of Bristol products acquired include specialty surface preparation chemicals for metal finishing industry and will be manufactured, warehoused and sold from the existing facility in Plymouth, Conn. Harshaw/Filtrol says it will employ some sales and technical personnel previously associated with MacDermid of Bristol.

#### Ogden Acquires

Ogden Corporation says that a newly formed subsidiary Ogden Environmental Services, Inc., has acquired the proprietary circulating bed combustion technology owned by GA Technologies, Inc., of La Jolla, Calif. According to Ogden, this technology incinerates non-radioactive hazardous waste. It has received the first permit issued to private industry by the Environmental Protection Agency under the Toxic Substances Control Act, covering the incineration of PCB's on a nationwide basis.



Armand Hammer

## Cyanamid Sees Steep Increase In Net Earnings

American Cyanamid Company is projecting earnings from continuing operations and net earnings for 1986 in the range of \$4.30 to \$4.35, an increase of more than 70 percent over earnings from continuing operations a year earlier.

In a presentation to the financial analysts of Philadelphia, George Sella, Cyanamid's chairman and chief executive officer, said that worldwide sales are expected to be approximately \$3.82 billion, an increase of about 8 percent over sales of \$3.45 billion in 1985.

Mr. Sella said that as a result of extensive restructuring of the company, approximately 75 percent of operating earnings in 1986 will come from the company's agricultural and medical operations.

Operating earnings of the medical segment are expected to be approximately \$175 million, up 23 percent from \$145 million last year, while worldwide sales are expected to increase 23 percent from \$1.187 billion to \$1.437 billion.

## 3M, NASA To Conduct Tests in Space

3M Company and the National Aeronautics & Space Administration plan to conduct 62 materials processing experiments over a 10-year period aboard the space shuttle. The experiments will be in the areas of organic and polymer science.

Under an agreement signed this month, any material produced or process developed will be for research and development purposes, with NASA and 3M as co-equal, "cooperative participants."

The agreement further states that it is the "intent of both parties that any promising results arising from this joint endeavor will result in commercial production and sales."

NASA says it will schedule the 3M experiment flights on a "space available" basis. Assignment of specific experiment flights will be contingent upon negotiation of individual task agreements.

The agreement calls for two experiments each year in the shuttle orbit or middeck over a 10-year period, two experiments a year in the cargo bay during the first three years of the agreement, and six experiments a year in the cargo bay from the fourth through the ninth year of the agreement.

## Occidental To Sell Business to Henkel

Occidental Petroleum Corporation has signed a definitive agreement to sell to Henkel Corporation the specialty chemicals business Oxy acquired through the purchase in September of Diamond Shamrock Chemicals Company. Financial terms of the sale to Henkel have not been disclosed.

Completion of the transaction, which is subject to regulatory approval, is expected early next year.

Armand Hammer, chairman and chief executive of Occidental, said the sale to Henkel is part of Oxy's previously announced program to dispose of assets acquired from Diamond Shamrock that do not fit with the long-term strategy of its chemical business.

In addition to the specialty chemical business, Occidental expects to sell a co-generation facility in Texas, which it would then lease back.

Occidental will continue to evaluate other parts of Diamond Shamrock "to see what doesn't fit," the company said last week.

Dieter H. Ambros, chairman of Henkel, said the specialty chemicals business makes an "ideal fit" with his company, saying it will "significantly strengthen the present \$288 million annual sales of Henkel Corporation,

the US operation of Henkel KGaA, by providing a broad marketing and service organization to accelerate the transfer of Henkel's European-based expertise in applied chemistry into the US."

The specialty chemicals business, based in Morristown, N.J., supplies products to the pulp and paper, textile, paint and coatings, leather, construction and agriculture industries. The business has worldwide sales of approximately \$180 million.

The operations consist of five manufacturing plants in the US and foreign operations in Canada, the UK, Norway, France, Spain, Taiwan, Australia, Japan, Italy, Mexico and Colombia. The business has approximately 1,100 employees worldwide, with 750 located in the US.

Henkel's parent company, based in Düsseldorf, West Germany, is a multinational producer of consumer products and specialty chemicals, with sales in excess of \$4 billion.

OxyChem, the chemicals operations of Occidental, produces industrial and specialty chemicals, plastics and resins, and agricultural products. OxyChem operates more than 50 manufacturing plants with more than 12,000 employees, and has annual sales in excess of \$2 billion.

## 'Contac' Makes Comeback

SmithKline Beckman Corporation's "Contac" cold medication more than regained its market share after a five-month absence from retail shelves, the company said last week.

Disclosing results of a survey conducted by A.C. Nielsen Company, SmithKline Beckman said "Contac" accounted for approximately 11.8 percent of the US cold medicine market in September and October, compared to 8.7 percent before the product was withdrawn from the market in March because of tampering. The product was reintroduced in August.

According to the Nielsen survey, "Contac" ran even in terms of market share with Burroughs Wellcome Company's "Acifed", while "Sudafed", another Burroughs Wellcome product, captured 11.3 percent of the cold medicine market, followed by A.H. Robins' "Dimetapp", with an 8.1 percent market share.

Most of the recall and reintroduction costs were attributed to "Contac", which is now available in capsule, caplet and liquid form. "Contac" sales in 1985 totaled \$80 million in the US.

Burroughs Wellcome and Robins declined to comment on the survey results, both saying they hadn't seen the survey itself. As a rule, the firms added, they do not comment on market share.

In addition to "Contac", SmithKline Beckman also removed its "Teldrin" allergy medication and "Dietac" diet medicine in March. The company spent \$50 million on the recall of the products and the reintroduction of "Contac" and "Teldrin". The company decided to drop "Dietac", which it describes as a "very minor" product.

Continued on Page 24

## Ampacet Europe Starts Up Belgian Plastics Additives Plant

Ampacet Europe has formally put on stream a new plastics color and additive production plant at Messancy in Southern Belgium.

When the new facility is fully operational, (in January, 1987) it will have the capacity to produce 20,000 tons of product a year and room for incremental expansion to 30,000 tons. To date Ampacet has spent \$17 million to build the new facility. Construction started eighteen months ago.

According to David Well, president of Ampacet, the company already has 85,000 tons of capacity at three plants in the US specializing in polyolefins and some engineering resins. In addition to the new plant in Europe, Ampacet is planning to construct a new plant in Ontario, Canada next year.

Mr. Well says that manufacturing requirements in Europe are somewhat more demanding than in the US, and that the experience gained at Messancy will be used to upgrade the company's North American manufacturing techniques.

He predicted that during the next three years Ampacet will double its worldwide sales.

Explaining the decision to build a production unit in Europe, Mr. Well noted that Ampacet has been serving the market there for twenty-five years, through a network of exclusive distributors. He cited the disruptive

fluctuations in the value of the dollar as one reason for building a plant there. Another was a desire to get closer to raw material sources. A third was the need to be closer to customers. The company will continue to

Continued on Page 24

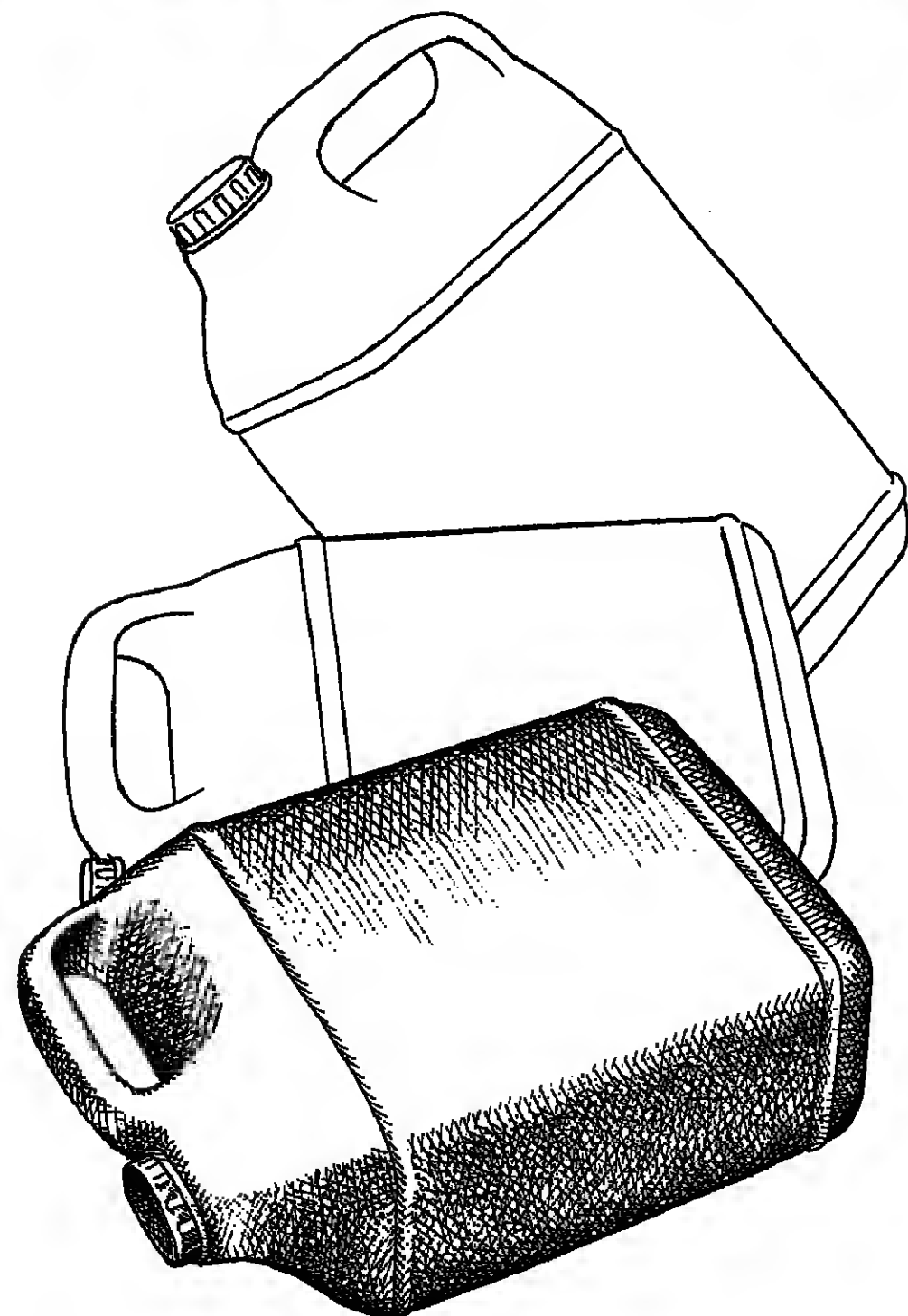


AMPACET EUROPE: The four sites of the company's new production facility at Messancy in Southern Belgium.

Jep 11 1986



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## OILS, FATS & WAXES

### Palm Oil Pricing Suffers From Lack of Consumer Interest

Palm oil pricing is slipping as Malaysian producers are beginning to respond to the slackened interest seen in the world market. Despite the weakening price, consumers are continuing to buy out of the palm oil market.

From late October through the first days of December, RBD palm oil prices mostly ranged between 18 and 18½ cents per pound, seldom deviating from this range. For the past two weeks, though, palm's position has noticeably faltered, undermining the steady price in that market for the previous six weeks.

A slight rise in palm oil pricing was said to be partly the result of speculation that it would be needing large quantities of vegetable oil, presumably palm. Instead, Indian buyers took soybean and rapeseed oil, and bought palm only irregularly.

For India's activity is thought to be the main reason for the current decline in price. It is said to be trying to re-sell some of its vegetable oil stocks to the world market. It overbought on soybean and rapeseed oil, and numerous sources report that India is seeking buyers for these oils.

**RESALE THREATENED**  
 "They're threatening to re-sell palm oil occasionally do," says an industry source who notes that it remains to be seen if they will do so. What is clear, though, is that the sale of the largest world buyers of palm oil has not made any purchases in recent weeks, signalling the Malaysians that they will make a move to boost sales.

In addition, Malaysian producers are seeking US buyers have also cut palm oil consumption. Since the latest price rise in October, US oil consumers have shied away from palm, to the point where many companies were re-selling their forward palm oil contracts and filling their oil needs with less expensive domestic soybean oil.

Palm oil stocks in the US at the beginning of December totalled 68.6 million pounds, down from the figure one month before of 71.1 million pounds.

The present fall in price has not yet induced US consumers to come back into the market, according to industry sources. "People who sold off old positions (a few weeks ago) are not ready to buy new oil," says a trader.

Referring to the "holiday doldrums," sources say that vegetable oil buyers are sitting put, apparently satisfied with their current supply levels.

Market players are not expecting the price

of palm oil to firm in coming weeks. As Malaysian producers continue to try to win back business from an indifferent market, pricing is expected to remain weak. "The general feeling is that (the price) will drop a little further," says a source, who voices doubt about the prospects of increased business for the Malaysians any time soon.

### VEGETABLE OILS

**COTTONSEED OIL** — The latest rise in price on this oil seems to be holding firm, despite the lack of consumer interest seen in

### PRICES TRENDLINES

WEEK ENDING DEC. 12, 1986

#### CHANGES/UP

Grease, white, choice, tanks, divd, NY, 1¼c. per lb.  
 Grease, yellow maximum 10%, 1½ tanks, 1¼c. per lb.  
 Lard, loose, bulk tanks, Chicago divd, ¼c. per lb.  
 Palm oil, NY, ¼c. per lb.  
 Tallow, inedible, tency, tanks, divd, NY, 1c. per lb.  
 Tallow, inedible, bleach, tanks, divd, NY, 1c. per lb.

#### CHANGES/DOWN

Coconut oil, NY, ¼c. per lb.  
 Peanut, 50% bulk, SE, \$10 per ton  
 Peanut oil, Southeast (re-refined), 1c. per lb.  
 Soybean, 44% bulk, Decatur, \$15.30 per ton  
 Soybean oil, Decatur, 1.04c. per lb.

### OILS, FATS INDEX

The Oils, Fats & Waxes Index reflects the prices of 11 representative materials in this sector and the quantity of each produced in 1985.

|               |       |
|---------------|-------|
| Dec. 12, 1986 | 79.50 |
| Dec. 5, 1986  | 85.83 |
| Nov. 14, 1986 | 81.81 |
| Dec. 13, 1985 | 87.84 |

Chemical Prices Start on Page 38

the market lately. The price has been climbing since October, when the price started out at 14¼c. per pound. Now, two months later, it is close to 18c. per pound, and not expected to weaken appreciably anytime soon.

The most recent increase in the pricing was due largely to dealers having difficulty covering their short sales. Sales were made weeks or months ago based on expectations of more availability of oil than actually appeared on the market. Consequently, dealers had to scramble for the scarce material, pushing the price up, according to an industry source.

The shortness of supply is due partially to the government's reduced cotton acreage program, and also to weather-related problems with cotton yield this year. Because of this, some crushers are said to be going on a 10/4 schedule, running for 10 days and shutting down for four, instead of the usual seven-day a week running schedule. In this way cottonseed crushers are hoping to stretch their production period for longer than they might otherwise be able to do.

**PEANUT OIL** — The market for this oil has been trading down lately from previous levels, reflecting the relative lack of interest that has been seen for peanut oil. One trader explains the drop in price by saying, "We went for a good period without any trading at all to indicate a (price) level — when the market came back it was at a lower level."

The decline in consumption is attributed to the usual and-of-year slack in demand in the oil market. Also a factor is the rather heavy buying that took place in the latter part of November, which allowed buyers to round out their stocks for the duration of the year, says a source.

Previously the price had been rising fairly rapidly, with some players speculating that it might become even with the price of imported peanut oil, which generally serves as a cap on domestic oil pricing. Because of the high prices that have been seen in this market, export business has been non-existent, a

### FRIDAY SPOT PRICES

MARKET CLOSE DEC. 12, 1986

#### CRUDE VEGETABLE OILS

|                                     |      |
|-------------------------------------|------|
| Corn oil, NY                        | 21   |
| Soybean oil, NY                     | NA   |
| Soybean oil, Pacific                | 21¼  |
| Soybean oil, Valley                 | 18   |
| Soybean oil, Minneapolis            | 18   |
| Soybean oil, NY                     | 18   |
| Soybean oil, Southeast (re-refined) | 27   |
| Soybean oil, Decatur                | 1413 |

#### REFINED VEGETABLE OILS

|                      |      |
|----------------------|------|
| Corn oil, NY         | 28   |
| Soybean oil, NY      | 30   |
| Soybean oil, Pacific | 28   |
| Soybean oil, Valley  | 3280 |
| Soybean oil, NY      | 1008 |

#### OLIVE OILS

|                      |        |
|----------------------|--------|
| Corn oil, NY         | 180    |
| Soybean oil, NY      | 110    |
| Soybean oil, Pacific | 180    |
| Soybean oil, Valley  | 147.10 |

#### FATS & GREASES

|   |     |
|---|-----|
| Grease, white, choice, tanks, divd, NY    | 13  |
| Grease, yellow maximum 10%, 1½ tanks      | 11¼ |
| Lard, loose, bulk tanks, Chicago divd     | 14  |
| Tallow, inedible, tency, tanks, divd, NY  | 14½ |
| Tallow, inedible, bleach, tanks, divd, NY | 14¼ |

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## OILS, FATS & WAXES

condition not expected to improve in the near future.

**RAPESEED OIL** — The price of this oil is quoted at 52 1/4 c. to 56 1/4 c. per pound, in drums, with one dealer suggesting a stronger price range of 54 1/4 c. to 56 1/4 c. per pound. Business is said to be brisk on both high and low erucic acid varieties. Domestically, "Business is good, people are buying it — our business is growing," says an industry source.

Dealers in the US are continuing to complain about the inexpensive, low-quality rapeseed oil of varying acid content seen here and in Europe. "We are still shipping material to Europe," says a source, "but that cheap material is playing havoc with the European market."

North American high erucic acid rapeseed oil is said to be rumbling at acid content levels of 50 percent to 54 percent. The low erucic material, meanwhile, is said to be growing in

popularity, largely as a result of the new rapeseed made a few months ago by a buyer of vegetable oils. "Interest in vegetable oil acid rapeseed oil is growing rapidly," says Procter & Gamble did nothing but help implementation in the US," says a source.

## FISH OILS

**MENHADEN OIL** — The price of menhaden oil is quoted at 12 c. per pound on the Atlantic Coast for crude material in tanks. The price at Gulf ports is quoted at 13 c. per pound, same basis.

Supplies are said to be holding up, despite the fact that production season for the US has ended. "Producers inventoried enough oil to meet demand," says an industry source, who notes that demand is "fairly good" at present.

There is said to be very little European interest in US menhaden oil because of large purchases recently made from Japan. Japan made an aggressive move downward in price, says a source, allowing them to sell heavily to European buyers.

Limited inventories have temporarily slowed sales from Japan, though, with recent sales to Europe expected to be the last for a while. "The Japanese have just about taken themselves out of the market — their offers are few and far between," says a source, who notes that tight supplies will probably lead Japan to raise prices when they do begin selling again.

## Color Additives Okayed by FDA

Food & Drug Administration has issued a final rule, effective January 1, permanently listing color additives for use in coloring ingested drugs and cosmetic lip products, as well as externally applied drugs and cosmetics.

The agency says it concluded these uses of the colors are safe. The action marks the first time FDA has applied the *de minimis* policy to an ingested use of a color additive.

Earlier, the agency permanently listed Yellow 6 for use in foods, drugs and cosmetics. Because the color may cause an allergic reaction in a small segment of the population, foods and drugs which are administered orally or nasally must declare the presence of Yellow 6 on their labels.

The agency said there are no reports of reactions to the chemical from external application.

Rods 8 and 9 may be used in externally applied cosmetics in amounts consistent with good manufacturing practices. In ingested cosmetic lip products, the colors may be used in concentrations up to 0.1 percent by weight of the finished product.

Cosmetics, Toiletory & Fragrance Association, the petitioner for the color, had requested that lip products be allowed to contain the colors in a 2 percent concentration.

## Shintech's K-Bin

Continued from Page 3

sents "the first step in Shintech's planned diversification in the US, building on Shintech's success in producing and marketing high-purity PVC resins."

"The new K-bin plant will produce 10 million pounds of PVC compounds per year initially, and has been designed to allow for substantial expansion," Kaganawa states. Based in Freeport, Tx., the facility will produce compounds using technology derived from Shintech's parent company in Japan, Shin-Etsu Chemical Company Ltd. The company says that Shin-Etsu's strength in polymer science should give K-Bin "an added ability to provide profitable technical assistance to its customers."

Joseph L. Bravner, president of K-Bin, previously served as director of marketing for Shintech's Freeport PVC

## AROMATIC ORGANICS

### Maleic Balance

Continued from Page 3

pounds and consumption reaching approximately 397.5 million pounds. MA producers say that the market this year has been on the tight side, due in part to production outages during the first half of the year.

There was pressure created by those producers, says one producer, and although supplies are back to more or less normal operation, "he believes that effects of the tightness would carry over into next year."

Some maintenance in the industry has been deferred, says this producer, pointing to a plant who had been expected to take a turnaround in the Fall. Catalyst changes in industry next year along with two weeks of downtime needed by Denka to tie up capacity should keep the market in balance, says another producer.

The other producer concedes that supply and demand are "a little more comfortable" but that all units are operating fully, and fears that business during the first quarter could be on the slow side.

The market "could get a little sloppy during the first part of the year," depending on how actively buyers build inventories in anticipation of the usual business pickup in the spring, he says.

Producers report some year-end competition, but say it is to no extent and is the ordinary. "Any good purchasing agent will talk up a price decline" during contract negotiations, says one producer, but "one or two excursions" to meet company situations, "there is stability in the market, and we feel pricing should stay where it is" even though feedstock butane costs have been weak.

### PRICING FIRM IN '87

Producers expect that pricing is going to firm up in the new year. "We have a strong stance, and see no reason for price to deteriorate when you've got a solid plant," he says.

Price in the industry is 53 cents per gallon, and producers agree that discounting is at a level, on an order of 5 to 10 percent, has been fairly steady the past several years.

After several years of poor profitability, the maleic market has turned around, says one producer. It is observed that pricing "has gotten away from being feedstock-driven (and towards) the value of the product in the marketplace."

The polyester resins market accounts for over half of the maleic anhydride consumed, and is expected to grow at a 4 percent slightly higher annual rate. Major polyester resin applications include automotive, construction and construction industries.

The other major markets for maleic anhydride are lube oil additives (11 percent of total), fumaric acid (10 percent), and agricultural chemicals (8 percent). These applications are seen as more mature, and one producer estimates a growth rate of only 1 percent per year for the lube oil and agricultural sectors.

## AROMATIC ORGANIC OUTPUT

US INTERNATIONAL TRADE COMMISSION NUMBERS POUNDS/GALLONS.

|                            | 9th Qtr. 1986 | 9 months 1986 | 9 months 1985 |
|----------------------------|---------------|---------------|---------------|
| Benzoic acid, anhydrous    | 184,790       | 588,502       | 685,421       |
| Benzoic acid, 98% min      | 998,910       | 1,024,745     | 1,046,016     |
| Benzoic acid, 95% min      | 208,118       | 617,995       | 506,580       |
| Benzoic acid, mixed esters | 30,078        | 71,038        | 85,461        |
| Benzoic acid, 90% min      | 848,332       | 2,665,384     | 2,833,928     |
| Benzoic acid, 85% min      | 481,047       | 1,578,322     | 1,589,048     |
| Benzoic acid, 80% min      | 2,891,081     | 8,468,690     | 6,437,881     |
| Benzoic acid, 75% min      | 87,550        | 280,998       | 284,448       |
| Benzoic acid, 70% min      | 898,246       | 2,149,270     | 2,112,916     |
| Benzoic acid, 65% min      | 224,240       | 881,978       | 822,488       |
| Benzoic acid, 60% min      | 1,888,081     | 5,776,050     | 5,824,082     |
| Benzoic acid, 55% min      | 2,051,214     | 6,787,368     | 6,833,814     |
| Benzoic acid, 50% min      | 308,622       | 970,671       | 975,378       |
| Benzoic acid, 45% min      | 164,008       | 489,985       | 475,378       |
| Benzoic acid, 40% min      | 203,178       | 587,282       | 583,814       |
| Benzoic acid, 35% min      | 214,182       | 584,734       | 537,578       |
| Benzoic acid, 30% min      | 1,518,980     | 5,788,922     | 5,474,880     |

Figures may not equal the sum of the monthly figures due to fiscal year revision.

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### CATALYSTS

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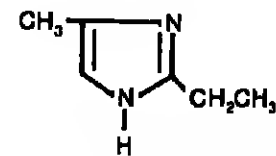
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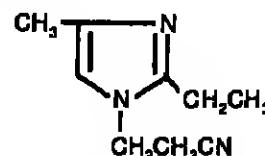


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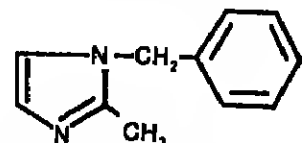
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## AROMATICS

held course last week, as the price reached the \$1.00-per-gallon-level. Market sources point to production outages in recent months and strong styrene demand as prime factors in the market.

It is noted that Shell has resumed normal operations at its Deer Park facility which experienced a mechanical problem around the end of November.

A trader attributes Shell's need to buy substantial amounts of material in recent weeks in part to its supply arrangement with Huntsman Chemical Corporation. It is said that Shell had been storing up benzene for several months prior to the final settlement of Huntsman's acquisition of American Hoechst's styrene business in March. "It has come to light this month," says the source, that Shell "has worked off their cushion."

The spot toluene market was quoted last week at 89c. per gallon, unchanged from the week before. Spot styrene was said to be holding fairly steady between 78c. and 80c. per gallon.

Orthoxylene spot pricing was quoted last week at 13 1/4c. per pound, a price that has stabilized in recent weeks after a firming trend. There is some tightness in the market, says one producer.

The paraxylene spot market was quoted last week at 18 1/4c. per pound. Downward pressure on pricing in recent months has been related to the startup of two Japanese facilities, one last month and the other next April. "Contract posturing for '87 has excluded some US producers," says one, and it is noted that one major producer has proposed a 17 1/4c. per pound price for the first quarter. Contract pricing this quarter has been 19c. per pound.

CUMENE — Producers have reported higher pricing this month in response to rising benzene costs. Last month's pricing was reported between 14 1/4c. to 14 3/4c. per pound.

One producer said pricing for the first half of December was 15c. per pound, and for the

second half of the month will be 15 1/2c. per pound.

Another producer reported a first-half price of 15.20c. per pound, and said that it expected to face some competitive pressure at that level. A third supplier observed that there are already market imperfections as a range of pricing the first half of the month between 15c. and 15 1/4c. per pound.

Cumene producers observe that they have encountered a surge in European demand for a large purchaser, the report suggests, material in recent months. According to the Bureau of Census figures, total US exports in the three-month period ending November were 90 million pounds, while the total for 1986 was 57 million pounds.

CYCLOHEXANE — In accordance with the industry-wide pricing formula, the 5c. per-gallon mid-month benzene contract price hike translates into a 4.125c.-per-gallon increase in cyclohexane pricing to a level of \$1.09150 for most producers. At least one producer's apostrophe is 1c. per gallon lower.

NAPHTHALENE SULFONIC ACID — American Hoechst Corporation says it will raise the price of its "Coupler 1" 1,1'-dihydroxy-naphthalene-8-sulfonic acid salt by \$1.00 per pound, effective January 1.

The new price will be \$8.75 per pound, f.o.b. warehouse, up from \$7.75 per pound. The company attributes the increase primarily to higher raw material costs. The product is said to be used principally in the reprographics industry.

PHENOL — BTL Specialty Resins Corporation says it is making an adjustment in its January 1 price increase. As previously announced, selling prices were to move up 8c. per pound, less a 2c. per pound temporary voluntary allowance (TVA).

BTL now says its price increase will be 1c. per pound less a 1c.-per-pound TVA. The company attributes the adjustment to higher benzene costs.

STYRENE — Dow Chemical USA says it is restructuring its styrene monomer pricing. List pricing changes from 28c. per pound to 30c. per pound with a 4c. per pound temporary voluntary allowance. The new price is effective January 1.

## Oil Fee Urged

Continued from Page 7

However, the study indicates that oil prices are already market imperfections as a range of pricing the first half of the month between 15c. and 15 1/4c. per pound.

For example, because the United States is a large purchaser, the report suggests, the price paid for foreign oil is not independent of how much the country imports. In particular, the greater the volume imported, the higher the price, and vice versa. Importing this means that a given increase in US demand for oil imports leads to a higher price and all pre-existing importers must pay.

Reducing the level — and cost — of imported oil will result in a real saving for the United States, although, the authors admit, distributing resources throughout the economy will have "winners" and "losers."

However, the authors argue that the gains to the "winners" are larger than the losses suffered by the "losers." Therefore, the study will produce positive net benefits for the nation as a whole.

The study considers various tariff instruments, including a variable fee designed to establish a floor price, and concludes that the latter is the most sound option. The authors also reflect the granting of special exemptions to particular countries.

Meanwhile a US oil industry executive noted last week that the nation is facing an oil crisis that will effect "everyone in this country — not just the domestic oil and gas industry."

ALTERNATE ENERGY NEEDED — Addressing an oil and gas symposium sponsored by Arthur Andersen & Co., Dr. Ray M. Luthi, president and chief executive officer of Occidental Petroleum Corporation, said he believes that the most serious issue facing the industry is the need to start developing alternate energy sources in order to protect the oil crisis that will come if US dependence of foreign oil is not reduced.

He had predicted that by the mid-1990's, the Organization of Petroleum Exporting Countries will have complete control of oil production and pricing.

US dependence on imports, he said, will increase as the domestic oil producing industry shrinks and demand grows. He noted that OPEC's market share has increased 20 percent in the past year alone and that the oil price per barrel could hit \$60 by the year 2000.

Another factor contributing to OPEC's future dominance, Dr. Luthi said, is that the "crude-oil block" nations will become net exporters of crude oil, competing with West-coast nations for OPEC oil.

The only solution to this impending crisis, Dr. Luthi said, is for the United States to establish and commit to a program designed to achieve energy independence. The first step is to make everyone aware that the US is vulnerable to supply disruption and dollar price. "It's very disconcerting that as soon as oil becomes cheap we again conveniently forget about energy independence," Dr. Luthi charged.

## Sulfite Warnings

Continued from Page 5

Sulfites were linked to restaurant foods, especially salads, FDA said. At the same time, regulations were issued requiring that sulfites be labeled when used in small amounts for baking and other food uses. If any sulfites are detectable in a food product, these regulations will be effective January 9, 1987.

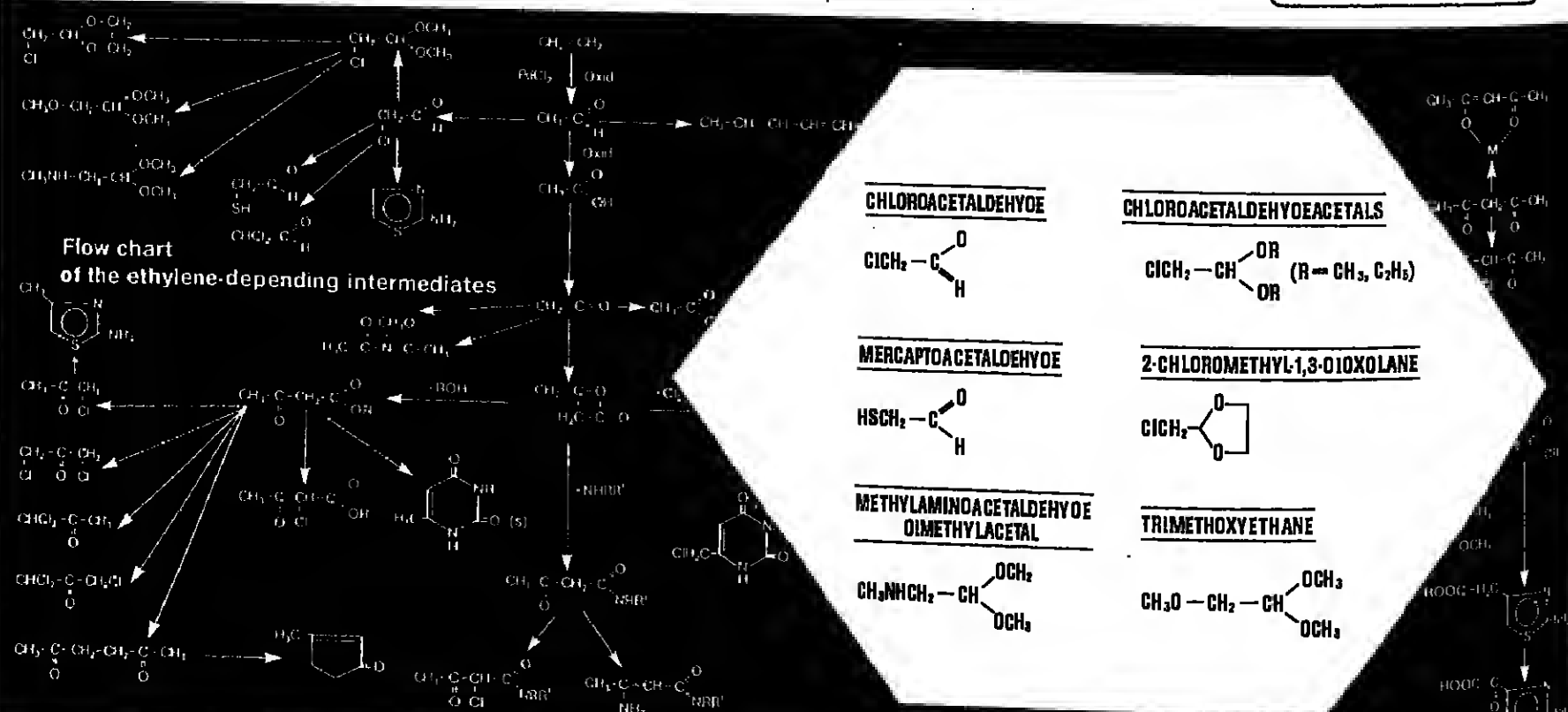
A label statement was already required for sulfites when they were added as preservatives in bottled goods.

The new warning for prescription drugs is to state the specific type of sulfite used and to state that it may cause allergic-type reactions, especially severe asthma attacks, in susceptible individuals, particularly asthmatics. The statement will be required to appear in the "warnings" section of the drug labeling and leaflets that go to physicians and pharmacists.

Sulfites are a group of chemicals used to preserve drugs and foods to retard spoilage. Banned from use in injectable drugs, such as antibiotics, local anesthetics and corticosteroids, sulfites are also used in some injectable solutions and ophthalmic preparations.

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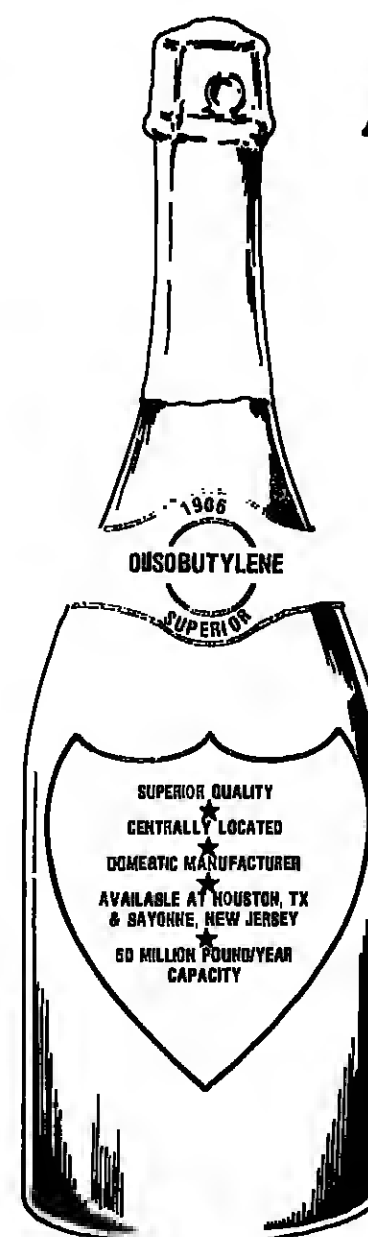
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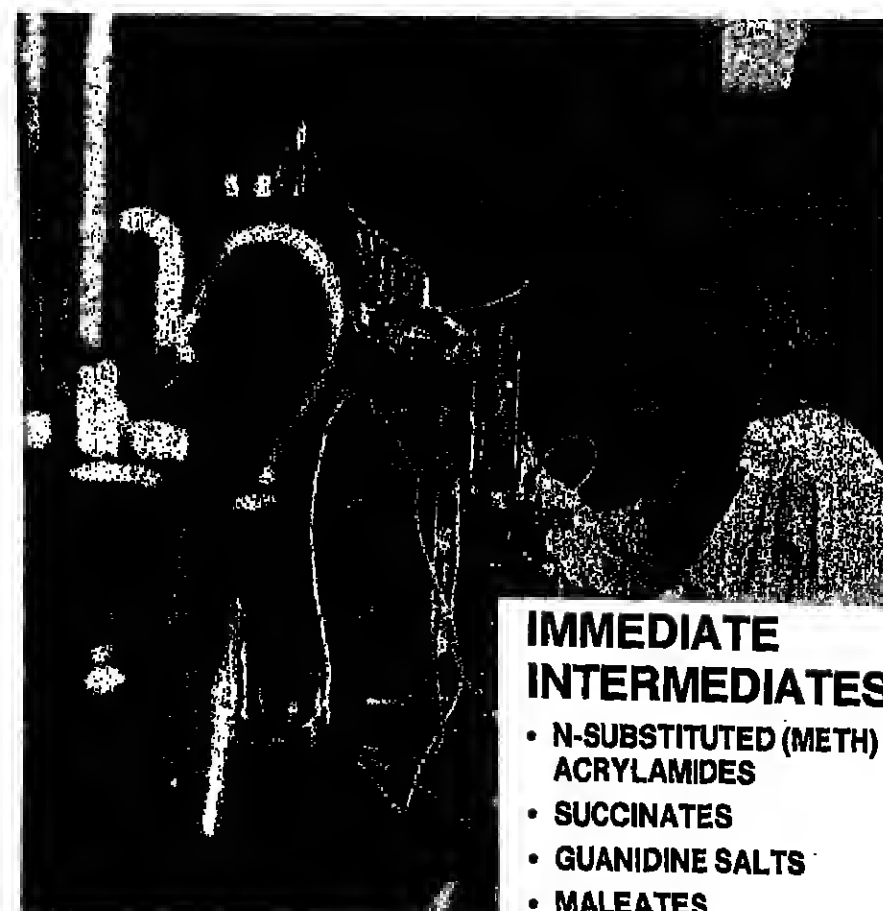


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## Chemical Finance

### Allied-Signal Selling Businesses

Allied-Signal, Inc. wants to sell seven operating units with total sales of about \$1.5 billion, and comprising the majority of the businesses in its electronics and instrumentation sector. The businesses to be sold are: Ampex Corporation, Amphenol Products, Linotype Group and the engineered components group businesses, including MPB Corporation, Neptune International Corporation, Revere Corporation and Sigma Instruments, Inc. Allied-Signal expects to complete the sale of all of the operations by mid-1987.

Morgan Stanley & Co. has been retained to assist with the sale of the Linotype Group, Lazard Freres & Co. with Amphenol Products, and First Boston Corporation with Ampex Corporation and the engineered components group.

Edward L. Hennessy, Jr., Allied-Signal's chairman and chief executive officer, says the company has decided to sharpen its focus on its three main businesses: aerospace, automotive and engineered materials, including the electronics capabilities in these areas.

### BASF Slates '87 Spending

In line with a five-year \$1 billion capital expenditure program, BASF Corporation expects to invest \$240 million in 1987, up from \$230 million this year. Major '87 projects include plants for the production of specialty amines and polytetrahydrofuran, as well as an expansion of tetrahydrofuran capacities, all underway at Gelsmar, La. (CMR, 11/1/88, pg. 9). About 50 percent of the 1987 capital spending will be devoted to cost and efficiency improvements.

The company has completed several projects in 1986, including a doubling of acrylic acid capacity at Freeport, Tex., an expansion in butanediol capacity at Gelsmar and opening of a new agricultural research center near Raleigh, N.C. The company's sales in 1986 are expected to total \$3.5 billion and overall corporate sales in North America, including Wintershall and Canadian chemical operations, should top \$3.8 billion, the company says.

### Asarco to Purchase Kennecott Subsidiary

Asarco Incorporated, New York, has reached an agreement with Kennecott Corporation to purchase the Missouri assets of Kennecott's Ozark Lead Company Division. Kennecott is a wholly-owned subsidiary of Standard Oil Company.

Ozark Lead, located in Southeastern Missouri, comprises a lead mine and concentrator with an annual capacity to produce approximately 100,000 tons of lead and 3,000 tons of zinc in concentrates.

The mine has ore reserves of 33 million tons, with average grades of 5.3 percent lead and 0.5 percent zinc. These reserves are sufficient to support production at capacity for 15 years.

### Union Carbide Tender Offer Succeeds

Union Carbide Corporation has received, through a successful tender offer, all the necessary consents to proposed amendments to the indenture to certain senior securities issued during its defense against an attempted acquisition by GAF Corporation.

Carbide said that it has received tenders (including guaranteed deliveries) of approximately 98 percent of the aggregate principal amount of its 13 3/4 percent senior notes due 1993, 14 1/4 percent senior notes due 1996 and 15 percent senior debentures due 2000, pursuant to its offers to purchase all of such securities.

The amendments restore to Union Carbide most of the financial flexibility it had before the debentures were issued.

Union Carbide said late in the week that it has accepted for payment all the securities that were tendered.

### Exxon to Sell Reliance Electric

Exxon Corporation has entered into a letter of intent to sell Reliance Electric Company and other companies managed by Reliance to a consortium comprised of the management of Reliance, CITICORP Capital Investors and Prudential-Bache Securities for \$1.35 billion. A definitive agreement is expected in late December.

Exxon estimates that the sale will result in an after-tax gain of \$275 million. Reliance, a manufacturer of motors and other electrical communications and weighing equipment, was purchased by Exxon in 1979 at a cost of \$1.235 billion.

Among the companies under Reliance's management are Gilbarco Inc., a manufacturer of pumps, measuring devices and service station dispensing equipment.

John Morley, who has been president and chief executive of Reliance since 1981, and other key personnel will remain in their positions in this leveraged buyout.

### Chevron Expects \$320 Million Charge to Income

Chevron Corporation, San Francisco, expects to record charges of approximately \$300 million against its 1986 four-quarter net income, reflecting a decline in the value of oil and gas properties because of the worldwide steep decline in oil prices. The charges relate primarily to wells in progress where development is no longer economic under present conditions, a spokesman for the company explains.

### Chemical Financial Briefs

Revlon Group Incorporated has completed the sale to Johnson & Johnson of the intraocular lens and certain related businesses of Revlon's Frigiltronics, Inc. subsidiary for approximately \$100 million. . . . Biotechnica International, Inc. will seek a new collaborator to engineer *Rhizobia* bacteria for use as soybean seed inocula when the current contract with EmlChem Agriculture SpA expires in April 1987.

The AAA-rated senior debt of five units of the Unilever Group have been placed on Standard & Poor's Corporation's CreditWatch with negative implications due to Unilever United States, Inc.'s announced friendly acquisition of Chase-Brough-Pond, Inc. for \$1.1 billion. . . . Gulf Resources & Chemical Corporation, Boston, Mass., has terminated its \$970 million bid for Imperial Continental Gas Association, London, because the offer was referred to the British Monopolies & Mergers Commission by the Department of Trade & Industry.

Ethyl Corporation is offering \$150 million of its 9 3/4 percent debentures due December 15, 2016 at 99.55 percent of their principal amount to yield 9.42 percent. First Boston Corporation, Goldman, Sachs & Co. and Scott Stringfellow, Inc. are co-managing.

## Plastics Producers

Continued from Page 5  
continue to draw down inventory. In most large-volume plastic markets, Mr. Durand explains, production is currently exceeded by demand, and the average inventory levels have fallen from 35 days to 30 days. If this continues, Mr. Durand asserts, supplies of commodity plastics may tighten considerably.

The largest market for plastics in the US continues to be packaging. SPI estimates that this use accounts for 27 percent of all plastic resins sales. The fastest growing market segment, however, is building and construction, which currently comprises 21 percent of the market.

This growth, attributed to increased sales of pipe and conduit, plumbing fixtures, siding, windows, doors and insulation, may outpace that of packaging in the future, although it will depend on the health of the construction industry and the effectiveness with which plastics producers face environmental liability and product liability issues.

Another striking growth area is reselling and compounding, grouped by SPI into "other domestic sales." Demand for plastic compounds, many of which go into automotive applications, has doubled since 1978.

The brightest spots in the market this year have been polypropylene, PVC, polystyrene and HDPE, which grew by 6.9 percent, 8.8 percent, 8.3 percent and 5.2 percent, respectively. Lower growth for LDPE this year is attributed to a continuing shift toward use of low-density material and a tendency toward thin-walling and downgauging in several molding applications.

### EXPORTS ARE STEADY

Although the US export percentage for plastics has not changed significantly in the last 10 years, export markets were strong in 1986. Polypropylene exports reached particularly dramatic levels, over 19 percent of total sales and use. Similarly, HDPE exports were up, at 12.8 percent of total sales. The trade deficit for PVC was reversed this year, as exports exceeded imports by 1.5 percent.

Major environmental issues will continue to affect the plastics industry, and future success will depend on producers' effectiveness in communicating with government agencies and environmental groups.

According to Charles O'Connell, president of SPI, a more open constructive link must be forged with traditional "adversaries." In the area of solid waste management, SPI expects to see a significant amount of legislation, particularly involving bottle coding, land deposit and forced recycling.

SPI, in conjunction with soft drink, poultry and grocery product manufacturers, is working to found COPE (Council of Plastics Packaging and the Environment) to effectively deal with the solid waste issue. Waste pollution, hazardous communication and workers' right-to-know laws will be other important areas, as will product safety.

Combustibility and toxicity are now another area of concern, says Mr. O'Connell, especially now that New York state has voted to continue using small-scale tests to determine plastic toxicity in residential construction.

The industry, he says, must work to achieve a less strident tone, and increased cooperation with special interest groups.

### Fertilizer Use

Continued from Page 5

urea, and 7 percent in solid urea. The inventory of anhydrous ammonia rose 2 percent relative to October 1985.

Exports of ammonium sulfate are up 10 percent in 1986, increasing more than 100 percent over the same period of 1985. TFI Inc. Exports of other nitrogen products decreased. Imports of nitrogen solutions were up 6 percent and imports of solid urea increased more than 100 percent.

Disappearance of processed phosphates rose 1 percent in the monthly comparison but was unchanged in the year-to-date totals. Imports of diammonium phosphate (DAP) of monammonium phosphate (MAP) into domestic markets was stronger in October than in the previous year.

Phosphate production rose 6 percent in October 1986 compared with October 1985, but dropped 3 percent for the year-to-date. Pro-

duction levels of DAP, MAP and phosphoric acid were higher in October.

The ending inventory of DAP rose 24 percent and MAP increased 4 percent, contributing to an overall increase of 13 percent. The phosphate rock inventory was 1 percent higher than in October 1985. Small imports of phosphate rock resumed in October, giving a total of 116,000 tons in the July-October 1986 period. Exports of DAP and MAP were down, totaling 333,000 tons for the month. Concentrated superphosphate export shipments showed improvement, increasing 16 percent over the 1985 year-to-date amount.

Disappearance of potash products dropped 34 percent in October relative to the previous year, and 14 percent in the year-to-date comparison. Standard muriate showed an increase in both comparisons, however.

Production increased in both comparison periods: 34 percent for the month and 19 percent for the year-to-date. Production of granular muriate recorded large increases in both periods.

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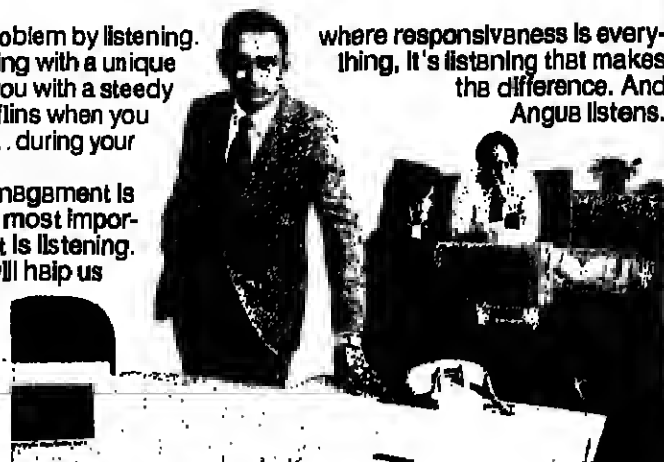


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## ALIPHATIC ORGANICS

### Chlorinated Solvents Hiked As Market Supply Tightens

The closure of E.I. du Pont de Nemours & Co.'s chlorinated solvents facility in Corpus Christi, Tex. last summer has sharply tightened the global supply-demand balance for perchloroethylene and carbon tetrachloride. As a result, Dow Chemical posted a 2-cent-per-pound price increase on perchloroethylene, effective December 1.

Dow's increase, however, was not fully supported by the industry. Vulcan Materials recently posted a 1-cent-per-pound price increase for perchloroethylene and pushed the effective date back to January 1. Occidental Chemical, another perc producer, also posted a penny price increase, effective December 5 for spot business and January 5 for contract customers.

In the face of these developments, Dow, the largest chlorinated solvents producer in the world, amended its perchloroethylene increase by cutting the hike to 1 cent a pound and moving the effective date back to January 1. PPG, which does not release price announcements, also posted a 1 cent per price increase, source say.

In addition to hiking perc prices, Vulcan also posted 1-cent-per-pound price increases for methylene chloride and 1,1,1 trichloroethane. Oxy and Dow have also increased prices on these two chlorinated solvents, and LCP Chemicals & Plastics joined the methylene chloride initiative. The methylene chloride increase marks the second price hike on the product since October 1.

A Dow spokesman says Du Pont's Corpus Christi shutdown reduces world supply of perchloroethylene and carbon tetrachloride by 10 percent, and will drive world operating rates up to 90 percent of global capacity. It is this tightness that Dow cites in hiking perc prices.

#### RIISING RAW MATERIAL

Another factor considered in rising perc prices, as well as methylene chloride and 1,1,1 trichloroethane, source say, is rising raw material costs, particularly chlorine prices. Chlorine producers successfully boosted prices by \$10 per ton in July, and are asking for another \$10 on January 1.

Another major factor cited in the perc increase has been the solvent's decline in prices during 1988, brought on mainly by a flood of low-priced imports. Perchloroethylene selling prices have fallen from about 23 cents per pound in the first half of 1988 to a recent low of 17 cents, one source says.

In recent months, though, the flood of low-priced imports has slowed. The main source of low-cost imports has been Rumania, but sources say the weak US dollar has prompted a cutback of material shipped from there. Statistics show that total perc imports to the US this year have increased (180 million pounds annualized in 1988 compared to 140 million pounds last year) but most of the material shipped to the US is coming from Dow subsidiaries in Germany, Canada, and Brazil.

This year began as a difficult year for perchloroethylene-carbon tetrachloride producers. Imports had taken a significant portion of the US market and prices were tumbling. In addition, demand for perchloroethylene in its largest end-use, dry cleaning, is on the decline. New dry cleaning equipment has greatly improved perc recycling levels while reducing emissions, causing perhaps a 5 percent to 10 percent annual decline in perc sales volume to the business.

Thus, it was a major coup for producers when Du Pont, the largest user of chlorinated solvents, announced it was shutting its Corpus Christi solvents plant in July and purchasing its chlorinated solvents in the market.

According to sources, every US maker of perc stands to benefit from Du Pont's decision, although large sales volumes haven't

been registered in the second half of year, because Du Pont has built large piles of chlorinated solvents and is expected to kick-in early next year.

Producers cited reduced imports of methylene chloride prices for the time in three months. Methylene chloride

#### PRICES TRENDLINES

WEEK ENDING DEC. 12, 1988

##### CHANGES/UP

None

##### CHANGES/DOWN

None

##### ALIPHATICS INDEX

The Aliphatic Organics Index reflects the prices of 20 representative materials in this sector and the quantity of each produced in 1988.

Dec. 12, 1988 ..... 222.8  
Dec. 5, 1988 ..... 222.8  
Nov. 14, 1988 ..... 222.8  
Dec. 13, 1985 ..... 222.8

Chemical Prices Start on Page 3

ports are entering the US at a 4-million-pound pace this year (30 million pounds through October), down from over 4 million pounds in 1985.

As a result, US production of methylene chloride is on the rise in 1988. Domestic output reached 407 million pounds through months this year, up from 383 million pounds during the first nine months of 1988.

Rising chlorine values were also cited in the methylene chloride price hike. One producer says a 2-cent-per-pound hike posted in October offsets the July chlorine price increase, while the January 1, methylene chloride hike will match chlorine price increases posted for the new year.

Like perchloroethylene, producers say the two methylene chloride price hikes are intended to reverse a year-long slide in the solvent's price. Following what one producer called a fairly successful October price increase, methylene chloride selling prices are currently quoted at 22 cents per pound.

Methylene chloride has suffered in recent years from intense Federal study of the chemical as a suspected carcinogen. As a result, demand has been falling, particularly in the aerosol sector.

Occidental Chemical posts a representative price schedule for the three chlorinated solvents as follows: perc list prices remain 20 cents per pound for distributor sales and 26 cents for consumers; methylene chloride prices are quoted at 28 cents per pound, less a discount of 8 percent and 1,1,1 trichloroethane prices are listed at 19 cents, less a 8 percent discount.

**ETHYLENE GLYCOL** — Celanese Chemical Company has announced an increase in the selling price of ethylene glycol and diethylene glycol, effective January 1, 1989.

Selling prices for industrial and automotive grades of ethylene glycol are being increased by 1c. per pound, while diethylene glycol selling prices will be increased by 2c. per pound. All other terms and conditions of sale remain the same, and list prices are not changed, the company says.

Producers announced October 1 increase of 2c. per pound on both these products, although only the industrial grade increase is said to have held (CMR, 11/3/88, pg. 21).

**METHYL ETHYL KETONE** — Celanese Chemical Company has announced a 1c. per pound increase in the selling price of MEK, effective January 1, 1989. All other terms and conditions of sale remain unchanged.

## ALIPHATICS

list prices are not changed, the company says.

**POLYOLS** — Olin Corporation has announced that it will increase its off-list price for "Poly-G" flexible polyols by 5c. per pound effective January 1, 1989, not to exceed the current list price.

The list price for Olin's flexible polyols remains at 70.5c. per pound in jumbo and car quantities. All other terms of sale, including payment, remain unchanged, the company says.

**PROPYLENE GLYCOL** — Dow Chemical USA has announced an increase in off-list prices for its family of propylene glycols, effective January 1, 1989.

The price increase will be 2c. per pound, not to exceed current list prices, for propylene glycol industrial, propylene glycol USP, propylene glycol, dipropylene glycol-L.O., and propylene glycol, "Siriene" food additive and tripropylene glycol.

Dow's current industrial grade list prices are as follows: 40c. per pound at Freeport, Tex. and Plaquemine, La.; 41 1/4c. per pound at Midland, Tex.; and 42c. per pound at Lexington, N.C., Long Beach, Calif., Pittsburg, Calif. and Savannah, Ga.

Prices are f.o.b. shipping point. In addition, a temporary voluntary allowance of 2c. per

pound is allowed for industrial and USP grade material shipped from Bayonne, N.J. The bulk to drum differential is 7.5c. per pound.

**WHITE MINERAL OIL** — The two major producers of white mineral oil and petroleum announced price decreases on the two products earlier this month. Witco Corporation reportedly initiated the move, with Penreco following. New prices are effective December 1.

Prices on all grades of white mineral oil are decreasing by 20c. per gallon. For instance, 180-190 viscosity USP grade material is now \$3.54 per gallon.

Petroleum prices for both companies are dropping by 1c. per pound. For instance, USP 115 white mineral oil in tanks is now priced at 29 1/4c. per pound.

One producer notes that the decrease applies only to bulk and truckload shipments. In addition, he says that customers that were already paying off-list prices will drop to the new list price, not the full 20c. per gallon or 1c. per pound.

The price change was effected, says one, to reflect current market conditions. He feels that the new posted prices now reflect actual selling levels. Producers dropped prices earlier this year (CMR, 4/28/88, pg. 18) in response to declining oil prices.

One producer says that 1988 demand for mineral oil has been healthy. He cites grain de-dusting as a new and growing application for the product.

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## DRUGS & FINE CHEMICALS

### Beta Carotene

Continued from Page 4

*dunaliella salina*, grown in shallow tanks in the California desert, harvested daily and extracted with natural vegetable oil.

Experimental extractions began as early as 1982 and Microbio has been manufacturing "Provatene" since January 1985. At Kodak, optimism abounds. A spokesman says the company hopes to become a major factor adding, "this is a fairly new field and we are in it on the ground floor." The firm plans to offer beta-carotene suspensions of either 1.4 percent or 3.5 percent, in 180-kilo lots. The company hopes for large-volume contracts, mostly from packing companies where beta-carotene is used as a food additive.

No prices have been set, but they will be higher than those for the synthetic material. Although the new product will be more expensive, the Kodak's spokesman feels confident that there is a market for it. "It is our belief," he says, "that the natural product has more value." He admits, however, that there is no firm evidence as yet to support this claim.

Supply of natural beta-carotene has been dependent on the availability of raw materials. Problems of supply can be caused by seasonal changes, compounded by the fact that some of the materials are imported from remote areas of the world. Raw materials are mostly red palm oil and alfalfa. Occasionally, one source says, there is a good shipment of particularly carotene-rich carrot oil from Israel.

Extraction is a delicate process and it is difficult to get a stable product since beta-carotene is sensitive to heat and oxidation. Also, synthetic carotene producers claim, beta-carotene produced in this way contains a number of impurities, among them the alpha, gamma and delta isomers of carotene. However, customers in the health food market are said to prefer the isomer-containing product for its alleged curative properties.

#### PRICE A LIMITING FACTOR

One producer of natural beta-carotene with a yearly capacity of about 1,000 to 2,000 kilos feels pricing is a limiting factor. "We can't compete," he says. "Cost at the moment is four to five times the amount for the synthetic product." He adds, "We are only in the business as a convenience to our customers."

A spokesman for the largest producer of synthetic beta-carotene, Hoffmann-La Roche, expressed a "wait-and-see" attitude about the algae extraction plans. "The algae technology is still in the early stages," he says, expressing concern about the purity of the resulting product. He stresses his company's long-time experience with the synthetic production process and the superior purity of his product. "There is no difference between the natural and the synthetic product," he says.

At present, the base price for 30 percent suspension in vegetable oil is \$40.75 per pound. There is general agreement in the synthetic industry that current prices do not reflect increases in production costs. Prices for beta-carotene have not been raised for several years.

For the immediate future, Roche expects growth development in the area of pharmacology. Research has been encouraging, says a spokesman, supporting the use of beta-carotene as a cancer preventative and as a substitute for vitamin A. In response to these developments Hoffmann-La Roche will launch a new tablet form early next year, tailored just for the pharmacological industry. And a number of manufacturers are supposed to have expressed interest.

Beta-carotene is currently used throughout the food industry as a food coloring agent, and generally the demand here is termed "stable."

There might even be some growth since, as a nature-identical color, it does not have to be listed as an artificial ingredient, a fact which makes it appealing to a growing market of consumers. "People are staying away from artificial products," says one source.

But there is general agreement in the in-

dustrial that beta-carotene is about to "ascend" its function as a food coloring agent as it enters more into the nutritional supplement arena. "Beta-carotene is increasingly looked at as an additive," says a BASF spokesman, the second major producer of synthetic beta-carotene. Although only about

#### PRICES TRENDLINES

WEEK ENDING DEC. 12, 1986

##### CHANGES/UP

None

##### CHANGES/DOWN

None

##### DRUGS INDEX

The Drugs & Fine Chemicals Index reflects the prices of 10 representative materials in this sector and the quantity of each produced in 1985.

|               |        |
|---------------|--------|
| Dec. 12, 1986 | 211.11 |
| Dec. 5, 1986  | 211.11 |
| Nov. 14, 1986 | 211.11 |
| Dec. 13, 1985 | 211.11 |

Chemical Prices Start on Page 38

two years in the running, BASF is equally optimistic about their product. "For the future," he says, "we will see demand from all places."

**PSEUDOEPHEDRINE** — Kroll For Chemicals will raise prices for pseudoephedrine hydrochloride, effective January 1. New prices will be as follows: 1,000 kilos, \$59.50, up from \$56.50; 1,000 kilos, \$81.00; 500 kilos, \$82.00; and 100 kilos, \$84.00. There will also be an increase for the sulfate ranging from \$59.50 for 5,000 kilos to \$68.00 for 50 kilos. The price change represents an increase of about 4 percent and the company blames the unfavorable exchange rate for the hike.

**NIACINAMIDE** — Following Lonza Inc.'s lead, Degussa will raise its prices for niacinamide feed grade, effective January 1, 1987.

The new prices are as follows: 5,000 kilos and more \$6.10 per kilo; 1,000 kilos to 4,999 kilos \$6.35; 250 to 975 kilos, \$6.60; and less than 250 kilos \$8.85.

Degussa adds that orders will be accepted from contract customers for quantities equalling not more than one-twelfth of purchases made from Degussa during the past 12 months. Orders must be placed prior to December 31, 1986 and for immediate delivery.

**SODIUM ERYTHORBATE** — As previously reported, Pfizer Inc. increased prices for sodium erythorbate to \$2.75 per pound up from \$2.60 per pound.

This price increase represents the first in four years, and a spokesman for the company terms the increase modest. He referred to the sodium erythorbate market as a "slow growth market" with only small increases every year. He foresees no further increases in the near future and feels the market situation can bear the increase.

One industry source expects Pfizer's only competitor Fujisawa of Japan, represented in the US by PMP, Fermentation, to follow suit. PMP could not be reached for comment. One supplier of the product describes the demand for sodium erythorbate as "good." He foresees no immediate shortages. "It's a closed market," he says, "and there are only two actors," referring to Pfizer and Fujisawa. "The increase will fly."

Used in the meat industry as an antioxidant, sodium erythorbate's growth potential is primarily linked to increases in the demand for meat. There is a small application



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## DRUGS & FINE CHEMS

for the product as an oxygen scavenger in the oil fields.

Furthermore, the recent ban on bisulfites for salad bars may create a new market. Although more expensive than bisulfite, sodium erythorbate in combination with citric acid, can be used for food preservation. Sodium erythorbate, a stereo isomer of vitamin C, represents a lower-cost alternative for vitamin C and can be used whenever vitamin labeling is not required.

**WHEAT GERM OIL** — Importers of wheat germ oil blame the exchange rate, especially the falling dollar against the German mark, as one puts it, for "a horrible year." "It made us non-competitive," says one source who imports 100 percent pure wheat germ oil from Germany. For the time being, he considers himself "out of the market," predicting no major changes for the coming year.

In contrast, a small domestic producer says: "Right now we are very busy; the market is pretty favorable for us." The company supplies the milk industry with wheat germ oil, where it is used as a source for vitamin E. Milk business is seasonal.

In addition, exports to Europe and the Orient benefit from the changes in the exchange rate. Overall, the source says, export prices fluctuate. "We will price our product for the going price that day," he adds.

Violin, the nation's largest producer of wheat germ oil reports a "flat" market with prices stable at about \$15 per gallon for cold

pressed product, depending on quality ordered. A spokesman predicts about a 3 percent growth for the coming year.

## Toxic Dumps

Continued from Page 5

beauty aids that are manufactured and imported by independent retailers rather than authorized US importers and exporters.

Known as parallel imports, these goods are generally banned under US trade laws.

However, under a 50-year Customs Service policy, such imports are allowed if the foreign and US trademarks are owned by the same company or by a parent and subsidiary or if the US trademark owner has authorized placing the mark on the product.

In 1984, the rules were challenged by a coalition of companies in the fragrance and cosmetics industry, led by Charles of the Ritz.

Siding with the coalition, the appeals court ruled that the Customs Service rules violate the Tariff Act of 1930 and subsequent amendments, which gave an "absolute" right of property right upon American companies that own registered trademarks.

The Federal government appealed the ruling along with discount marketers, arguing that it would "result in a serious disruption of established business practices and valid commercial expectations."

Retailers are able to sell imports at discount prices by purchasing them overseas at the world price, while the US trademark owners pay higher prices demanded by the manufacturers.

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## Waste Generators

Continued from Page 5

filling into their remaining land disposal capacity in order to ensure that they can handle waste residuals from their own rapidly growing treatment business, he said.

According to Mr. Back, this expected capacity is a by-product of the Hazardous and Solid Waste Amendments (HSWA) which was enacted by Congress in 1984.

The firm's surveyed requirements. The firm's surveyed requirements. The firm's surveyed requirements.

The waste management industry's near-capacity has been affected more by the "minimum technology requirements" than any other part of the amendments, said Mr. Back.

Waste management firms, he explained, report that the requirements — for better design standards in pits and surface impoundments — have many hazardous waste generators de-

layed their on-site waste lagoons or closed facilities. "The resulting demand for age and leak closures and cleanups has proved business dramatically for many waste management firms, and has placed a new emphasis on chemical treatment firms and incinerators that handle liquids and sludges," he said.

Waste cleanup business, plus the fact that waste generators are using waste pre-treatment techniques to reduce the volume of waste sent to commercial waste treatment firms, has led to at least a 20 percent increase in the amount of solids and sludge brought in to the firms interviewed, said Back.

Commercial incineration firms responding to this trend by changing their facilities in order to handle more solid and liquid wastes," he said, adding that some waste management companies plan 200-400 percent increases in their solid and sludge waste handling capacity by 1990, barring any delays in regulatory permitting process for new or added facilities.

Waste management firms, he explained, report that the requirements — for better design standards in pits and surface impoundments — have many hazardous waste generators de-

## BP Compounder

Continued from Page 4

high voltage insulation compound production facilities. At the same time BP PPI and the polyolefin wire and cable manufacturers of the Dow Chemical Company and at Dow technology and patents, allowing BP PPI to offer additional performance-enhancing compounds to the power cable communications markets. It also announced plans to increase its capacity for a long thermoplastic elastomers for use in automotive and specialty markets.

BP Chemicals disposed of its U.K. PVC business, transferring one of its plants to ICI and closing the rest. At the same time BP acquired low-density polyethylene process and a plant from ICI. Since then, BP Chemicals has seen one of Europe's leading polyethylene suppliers.

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10 percent. Employment is forecast to remain the same.

Companies predict moderate increases in costs, with raw material prices advancing 1 percent while fuel and electric energy hold even. Construction costs, which increased 10-12 percent annually a few years ago, are expected to go up only 3 percent.

The industry believes further progress will be made in trade and predicts a 4 percent rise in exports. Commerce Department predicts a 2 percent increase in chemical imports, resulting in a 8 percent increase over the trade surplus of 1984.

Capital expenditures are predicted to rise 9 percent overall. An unusually high 16 percent will go to environmental controls, including air and water quality control and solid waste management. Only 24 percent will be put back into new capacity, a low proportion that reflects the lack of need for expansion of many products.

Manufacturers expect an 82.3 percent capacity utilization rate which would be the highest in seven years. 82.9 percent in 1979.



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## Ampacet Europe

Continued from Page 9

market its product through its distributor network.

International marketing manager Daniel Gilray estimates the European market for Ampacet's range of products at 200,000 tons a year. The company, he says, should be able to take "11 percent going up to 16 percent" of that total.

The primary market for the company's additives is blown and cast polyethylene film, and is growing at 5 to 10 percent in Europe, according to Mr. Gilray.

The next largest is detergent and bleach product additives, which Mr. Gilray says, is growing at 3 to 5 percent.

Other major markets are in extrusion coatings said to be growing at 5 percent and polypropylene fibers and injection molding pipe.

As major competitors, Mr. Gilray cites Schulman, Ciba-Geigy, Cabot and Hoechst.

The company's line of products includes color concentrates, degradable, flammic retardants, foaming agents, ultraviolet absorbers, antistatic agents, slip additives, antioxidants, antiblocking agents and multifunctional concentrates.

## NIH Probing Argentine Test

National Institutes of Health has launched an inquiry to determine whether Federal guidelines were violated last Summer when a biomedical research laboratory field-tested a genetically altered rabies vaccine in Argentina.

NIH official Dr. Bernard Talbot says he wants to know whether the Wistar Institute of Philadelphia used Federal funds to conduct the tests in Argentina. The use of such money would be a violation of the guidelines. However, Wistar officials say Federal grants were not used to fund the experiments and maintain the field tests were legal.

The tests, which involved the inoculation of 20 cows with the genetically engineered rabies vaccine, were conducted without the consent of either the Argentine or US governments.

After learning of the tests in September, the Argentine government criticized the exercise as "a violation of ethical principles."

In the US, Federal officials and some biotechnology company executives said the experiment raised questions about the adequacy of the Reagan Administration's program for regulating the biotechnology industry.

The Wistar officials say the tests, which were carried out in conjunction with the Pan American Health Organization, were legal because Argentina has no rules for field-testing genetically altered, living microbes, and the US regulations did not apply.

"We want to know how this field test was paid for," says Dr. Talbot. "If NIH gave Wistar a grant specifically for this field test and we did not know about it, then they are apparently in violation of the guidelines, 'but if the money they received from us was used only to develop the vaccine, then they would not be in violation,'" he says.

Wistar, the nation's oldest biomedical research institution, has received about \$1.4 million from NIH since 1984 to develop new rabies vaccines. The vaccine tested in Argentina was developed by adding a single gene from the rabies virus to the cowpox

virus, which has been used for more than 20 years as a smallpox vaccine.

Before releasing gene-altered microbes, the US, firms receiving Federal grants must first get approval from a panel of scientists. Dr. Talbot says the rules also apply to experiments conducted in foreign countries if the experiments are "supported" by US funds.

## Air Separation Unit Slated in California

IGI Corp., says that its American subsidiary has awarded an \$11 million contract to Ansutech Inc. for construction of a 10-ton-per-day air separation plant in California.

Ansutech will build the facility for American Gas Industrial Gases to the Laguna Station Park near Elk Grove in Sacramento County, which is zoned for semiconductor industry development. The plant is scheduled to be completed in 1990.

The facility will produce liquid nitrogen, oxygen and argon which are used by semiconductor, steel, welding, medical and other industrial applications. In addition, it will produce ultra-high-purity nitrogen to serve the electronics industry in northern California and provide cylinder gases to American Gas for distribution through its chain of Weller's Welding stores in the state.

Under the contract, Valley Forge-based Ansutech is responsible for turnkey construction of the plant, including engineering, design, installation and start-up. Ansutech is a joint venture of AmeriGas and Nippon Gas K.K., Japan's largest industrial gases firm.



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Pharmaceutical samples given to physicians by manufacturers play an important direct therapeutic role, according to a recent poll conducted for the Pharmaceutical Manufacturers Association.

The poll also showed that physicians' use of samples appear to be fairly restrained, and physicians would overwhelmingly reject an alternative system using coupons instead of samples.

Physician Attitudes Toward Complimentary Drug Samples" reports data from a survey of 804 physicians on their use of complimentary drug samples provided by pharmaceutical companies. Developed and conducted by National Analysts, a division of Jones Allen and Hamilton, Inc., the interview was based on a structured questionnaire.

The study found that, on average, most doctors dispense only one prescription

product sample at a time, and seven out of ten sampling occasions result in a prescription for the sampled product.

Physicians gave unaltered responses to questions about why they use prescription samples; the most frequent responses were for medical concerns (81 percent) and concerns for patient costs (78 percent).

Medical concerns included the ability to test the efficacy and observe the possible side-effects of the drugs, and the need to start a treatment immediately. More than three-quarters of the doctors surveyed viewed samples as a way of helping to lower patient medical costs.

The poll found that samples are most often used as a "test" — assessing efficacy and side-effects when the drug is new to a patient — especially by internists. The data in the survey make it clear that physicians attach greater importance to assessing efficacy and side-effects when the drug is new to the patient, rather than new to the doctor.

Pediatricians responded that samples play an important therapeutic role, especially when pharmacies are closed or not easily accessible, and samples are the only resource at hand.

Physicians overwhelmingly rejected using a coupon system as an alternative to direct sampling. Many physicians stated that their objectives in providing samples would not have been met under such a procedure.

Requiring physicians to sign receipts for packages of medication samples generated the least opposition among possible modifications to the sampling system. Although more than a third of the physicians viewed it as inferior to the current system, three-quarters would have obtained the most recently sampled medication had such a requirement been in effect.

## Biotech Team In DNA Advance

Scientists at Genetics Institute, Inc. have produced a human protein which may be used to treat cancer and infectious diseases.

The protein, called macrophage colony stimulating factor (M-CSF or CSF-1) was produced by recombinant DNA technology. It stimulates blood cells involved in the body's natural defenses. Drs. Gordon Wong and Steven Clark presented the results of their team's work on M-CSF last week at the 1988 annual meeting of the American Society of Hematology in San Francisco.

M-CSF promotes the production and stimulates the activity of blood cells called macrophages, which play an important role in the body's defense against disease. It is believed that augmenting macrophages with M-CSF will be useful in the treatment of certain infectious diseases, such as those affecting the lungs.

In addition, M-CSF therapy, either alone or in combination with antitumor monoclonal antibodies, may strengthen the body's ability to fight cancer.

Genetics Institute has commenced pre-clinical testing of M-CSF and plans to begin human clinical testing in 1989.

Previously, natural M-CSF had been isolated in small quantities from human urine. Through a collaboration with Japanese scientists at Morinaga Milk Industry Company Ltd., Jichi Medical School, and Tokyo University, Genetics Institute has shown that its genetically engineered M-CSF is structurally identical to the natural protein.

Scientists from other organizations have previously described the production of an M-CSF-related protein by recombinant DNA methods. However, this protein differs substantially in structure from the natural factor obtained from humans, while the Genetics Institute M-CSF is virtually identical to the natural molecule.

The biological significance of the M-CSF-related protein thus remains uncertain. Future investigation may establish that the single human M-CSF gene determines two related proteins with different functions.

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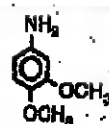
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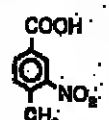
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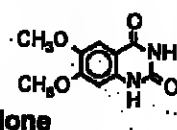
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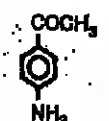
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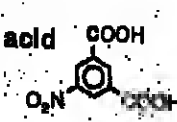
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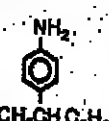
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- Analysis of catalytic behavior of mammalian, microbial and fungal lipases, including application to industrial processes.
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## Aspirin Role May Grow

Researchers say aspirin, used for decades to relieve headaches and cold symptoms, one day may be used to solve problems of pregnancy, constricted blood vessels and to help prevent various diseases.

At a symposium sponsored by George Washington University, the scientists said aspirin is emerging as a drug with many more uses than previously believed. Although it has been challenged as a pain killer in recent years by acetaminophen and other drugs that do not cause the stomach problems aspirin can, they said new markets may open.

Aspirin is increasingly being used in new clinical trials to see if it can help in treating diseases such as AIDS and cancer, as well as preventing some problems with pregnancy.

Dr. Allan L. Goldstein, chairman of biochemistry at the center and moderator of the program, said aspirin is emerging as a new "wonder drug" with many applications.

"Perhaps one of the most exciting new frontiers for clinical applications of aspirin is in the field of immunology," Dr. Goldstein told the session, which was supported by the Aspirin Foundation of America, an organization comprised of companies that make, process and promote aspirin products.

"These findings have wide-ranging implications for many immunological disorders and diseases to which immune response is a factor," including cancer, AIDS and perhaps the common cold, he said.

Dr. Judith Hsia, an associate of Sr. Goldstein, said both aspirin and a protein, thymosin, stimulate production of gamma interferon and interleukin-2 from white blood cells.

These cell products, known as immune modulators, boost the disease-fighting immune system and are being tested against diseases such as cancer and AIDS.

Preliminary human trials confirm test-tube results that the equivalent of one to two aspirin tablets daily can triple interferon production and double interleukin output, Dr. Hsia said.

## Toxic Chemicals Focus of UN Rules

The United Nations Environment Programme has proposed rules for nations to follow in dealing with toxic chemical accidents. Speaking at a Cairo seminar on industrial hazardous waste, UNEP Chief Dr. Mostafa K. Tolba outlined plans for "a legal package that will vastly reduce the chances of another Bhopal or another Basel."

He proposed two new international conventions, one binding governments to notify each other when, where and how chemical

emergencies resulting in transboundary pollution occur, and the other providing measures for prompt help among governments after an accident.

A third measure involves cooperation of governments, industry and community leaders to identify where acutely toxic chemicals exist, prepare measures to limit possible accidental releases and deal with accidents if they do occur.

## Vitamins Linked To Lung Cancer

High doses of vitamins B-12 and folic acid may help prevent lung cancer in smokers by reversing harmful cell changes in lung tissue caused by tobacco fumes, a scientist said last week.

Tobacco smoke apparently causes a local vitamin deficiency when it kills lung tissue, creating cell damage believed to lead to cancer, said Dr. Charles Butterworth, chairman of the department of nutrition sciences at the University of Alabama.

A study conducted by university researchers showed daily doses of folic acid and vitamin B-12 reversed the cell changes, but Dr. Butterworth said the evidence did not mean smokers could continue their habits and stay healthy by taking vitamins.

"My own personal view would be to recommend that people stop smoking," he said at a nutrition seminar in Washington.

The cell abnormalities that lead to cervical cancer and that show up in a pap smear may be caused by the same sort of local vitamin deficiency, according to Dr. Butterworth.

The scientist is leading a five-year study that began in January and will enroll 100 women to determine if vitamin supplementation can help ward off cervical cancer.

Early results indicate women with normal cancer have low folic acid intake, he said.

## SmithKline Vaccine Approved in Belgium

SmithKline Beckman Corporation says its genetically-engineered hepatitis B vaccine has received marketing approval in Belgium. The vaccine has undergone clinical testing in a total of 15 countries abroad, but the company says it has made no decision about pursuing the US market.

SmithKline Beckman is not active in the US human vaccine market and Merck & Co. has already received regulatory approval for the US for its genetically-engineered hepatitis B vaccine. Merck plans to begin marketing the product here in January, and already sells the vaccine in Germany, Switzerland and Singapore.

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## Pharmaceutical Firms Invest In New Drugs for the Elderly

The pharmaceutical industry says it is responding to the demands of the "new demography"—that of an aging population and the need to improve quality of life—by investing heavily in research and development of drugs for the elderly.

A report by Pharmaceutical Manufacturers Association examines the problems faced by America's fastest growing population segment and suggests steps the health community must take to deal with it.

By Social Security Administration estimates, there will be more than five million persons over the age of 65 by the year 2000. Another study projects nearly nine million cases of Alzheimer's disease in persons over 65 by the year 2050.

As these demographics change and more is learned about the biology of aging, the research and development of new pharmaceuticals to treat these diseases will become more complicated and more expensive.

"Our changed population has produced a challenge for both the individual and for society," writes Dr. Leslie S. Libow, professor of geriatrics at the Mount Sinai School of Medicine.

### 'NEW DEMOGRAPHY'

"So widely before us has ever faced this new demography. Indeed, our entire environment needs to be refocused with regard to our aging elderly population. It's a matter of living life to years, not simply years to life."

In the report, Dr. Henry G. Grabowski, an associate professor at Duke University, addresses efforts in cost-containment programs and regulatory measures.

"Suppose a drug or a medical device is truly enhancing? In other words, suppose it does not reduce costs but that it results in higher patient well-being...It is naive to think that our current prospective payment system will lead to the optimal social decision in every situation," Dr. Grabowski writes.

Libow points out that the burden on manufacturers to meet regulation requirements, increased paper-work, and cost-containment programs will work to discourage medical innovation.

The report also focuses on the pharmaceutical industry's concern for the safety and efficacy of drugs for the elderly. Many companies now include older subjects in their testing programs, especially for anti-hypertensive and other cardiovascular drugs.

The final section of the report studies adverse drug reactions in the elderly, ascribing many of these reactions to poor physician-patient communication and poor patient compliance.

Also considered are prescribing patterns for the elderly, including data showing that cardiovascular, antibiotics, and analgesics

are the most frequently prescribed medications for the older Medicaid population.

In addition to finding new treatments for the elderly, the section concludes that emphasis must be placed on prescribing existing pharmaceuticals in a safe and effective manner.

The authors of the papers throughout the report call on new educational and research measures to deal with medicine and the elderly, including establishing centers for geriatric pharmacology and pharmacy, providing medical school scholarships for encouraging the study of geriatrics, establishing centers for nursing home pharmacology and pharmacy, and conducting a committed research agenda by the pharmaceutical industry.

"The pharmaceutical industry is working hard to find treatments and cures for the diseases that affect the elderly," says PMA President Gerald Mossinghoff. "These diseases not only threaten life but also greatly reduce the quality of life for older Americans."

PMA board chairman William Miller adds, "...there is no better buy than good health. It is disease that is so expensive."

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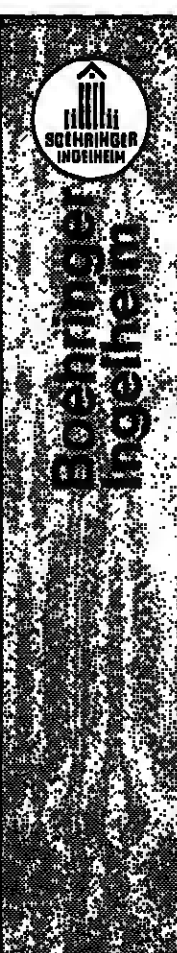


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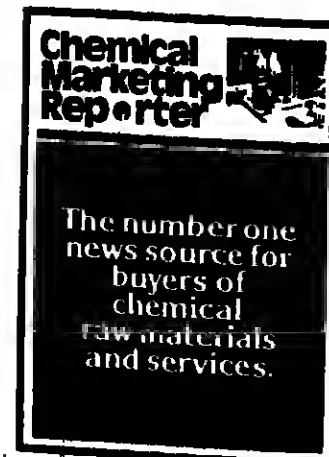
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## US Economy Seen Growing At Moderate Pace in 1987

The US economy should grow moderately in 1987 with somewhat higher inflation but stable interest rates, according to the latest survey of the nation's business economists.

Jerry L. Jordan, president of the National Association of Business Economists (NABE), last week released the results of the latest quarterly poll of the organization representing approximately 4,000 corporate, consulting, and government economists.

"The economists expect real GNP to rise by 2.5 percent in 1987 on a fourth quarter-to-fourth quarter basis," according to Mr. Jordan. "That compares with an increase of 2.5 percent estimated for 1986."

The economists look for little improvement in the unemployment rate, forecasting it to average just below 7 percent next year. However, they expect after-tax profits to advance by about 8.5 percent in 1987.

Commenting on the reasons for next year's growth, Mr. Jordan noted that the survey indicates a reduction in both housing starts and auto sales in 1987. "However, despite some negative influence capital spending, and they expect a turnaround in the foreign trade picture," he said.

The median forecast is a merchandise trade deficit of \$132 billion in 1987, compared with a record estimated at \$148 billion in 1986 (balance-of-payments basis).

Mr. Jordan, who is also Senior Vice President and Chief Economist of First Interstate Bancorp (Los Angeles), observed that conditions in the economists' own firms seem to

support a view of growth in 1987. "More than one half of the respondents indicated rising demand in the past three months, up from only 38 percent reporting higher demand a year ago."

"The economists generally see 1986 as the low point for inflation, with consumer prices rising by less than 2 percent on a fourth quarter-to-fourth quarter basis. For 1987, their forecast is an inflation rate of 3.8 percent. They look for some further decline in the foreign exchange value of the dollar over the course of next year, but they anticipate little change in interest rates."

The median forecast indicates that the economists believe the bank prime rate might be slightly below the current level of 7.5 percent by the middle of next year and slightly above the present level by the end of 1987," according to Mr. Jordan.

"As the U.S. expansion begins its fifth year, economists continue to be concerned about a recession on the horizon. Although only about 30 percent believe we will be in recession by the end of 1987, about 80 percent expect a downturn by the end of 1988, and over 80 percent anticipate a decline before the close of 1989."

"Nevertheless, with respect to economic policy, 68 percent of the economists believe that monetary policy has been either too stimulative or 'about right,' with over 70 percent endorsing Federal Reserve policy as on track."

At the same time, the economists appear more pessimistic about the budget deficit.

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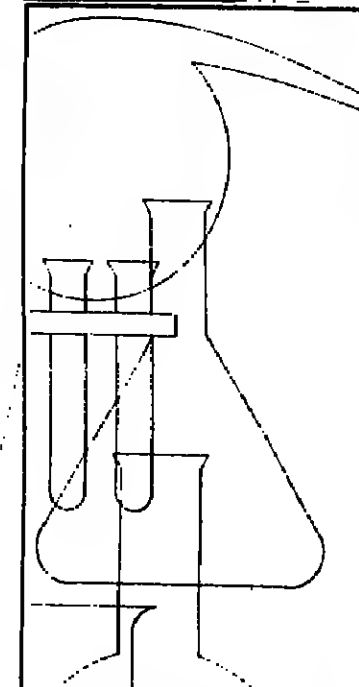


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## HEAVY & AG CHEMICALS

### Sodium Silicate

Continued from Page 7

pany's total sales. Terms of the transaction were not disclosed. As part of the sale, Power will offer employment to all 27 Du Pont employees who now operate the three sodium silicate plants involved in the sale.

Power will also offer employment to selected Du Pont technical and marketing employees.

"The business, while solid and healthy, no longer fits in the long-term portfolio of Du Pont's chemical businesses," said John C. Breckenridge, director of Du Pont's industrial chemicals division. "We are confident Power silicates will provide the necessary resources and commitment to this business and will continue to successfully serve the marketplace," he added.

Merchant sodium silicate producers like Du Pont concede that demand for the product has been relatively flat recently. Nevertheless, most are looking for the chemical to grow at close to 2 percent per year through the end of the decade, owing to general economic recovery and new or growing applications.

While more than 10 companies produce sodium silicates in the US, only three in addition to Du Pont — PQ Corporation, Occidental Chemical and Chemical Products Corporation — are generally considered merchant market producers. The others make silicates mainly as an intermediate to catalysts, zeolites and paint additives.

**WASTE TREATMENT MARKET**  
A merchant area with promise is waste effluent treatment. Government pressure to clean up waste sites and to regulate waste emissions is increasing the cleanup and waste control effort.

Chemix Technologies Inc., a New Orleans-based waste treatment company, owns the patent to a process by which it combines sodium silicate with a calcium-based setting agent, such as Portland cement, kiln dust or fly ash, to treat effluent waste.

According to a spokesman, the "Chemix" process involves reaction of the calcium-silicate compound with the inorganic constituents in a waste stream. The resultant insoluble compound can then be extracted and disposed of in a sanitary landfill.

The spokesman says Chemix is currently treating waste at Amoco Chemical Company's Wood River, Ill., facility as part of a project that should be completed about one year from now. The company is also involved with the South Essex Sewage district in Salem, Mass., in a project to clean up chromium contamination.

The spokesman notes that the "Chemix" process was patented in 1973 but that industry interest wasn't particularly strong until Congress passed the RCRA amendments in 1984.

Another potential growth market for sodium silicates is in the active fluid cracking catalyst (FCC) business, as the raw material for the production of zeolites, the FCC "active ingredient."

Growth will be somewhat limited for merchant silicate producers, because most FCC producers, such as Englehard Corporation,

Ethyl Corporation, and W.R. Grace & Company, have captive silicates production.

However, in the second quarter of next year, the Ketjen Catalysts division of Akzo Chemie America plans to come on stream with a 50 percent expansion of its Bayport, Tex., catalyst production facility. The unit, which began production in late 1984, reportedly will have an overall FCC capacity of 44,000 tons per year when complete.

The plant is of interest to merchant silicate

### PRICES TRENDLINES

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| Dec. 5, 1988  | 113.89 |
| Nov. 14, 1988 | 113.89 |
| Dec. 13, 1985 | 113.89 |

Chemical Prices Start on Page 36

silicate producers because, at least up to this point in time, Akzo has had no capacity to produce silicates in the US. It does, however, make them in other parts of the world.

One silicates producer notes that the Akzo expansion will not affect the silicates business as much as the FCC business, since, to extent, Akzo will only be taking market share from other FCC producers. Nevertheless, the merchant market should benefit, since most FCC producers have captive silicates production and any market share that Akzo picks up will create merchant silicates demand.

In addition to these changes in the FCC industry, FCC demand as a whole is said to be strong and is expected to be increasing next year. This is mainly due to the EPA mandated lead phasedown: as lead is eliminated from the gasoline pool, oil companies are looking for alternative sources of octane, and in many cases, increased catalytic cracking is called for.

On top of this, lower gasoline prices on the retail level, is spurring consumer demand for now relatively cheap high-octane gasoline. Observers say this phenomenon is exacerbating the octane scramble and consequently the increased interest in FCC's.

Another growth area for silicates, although small on a volume basis, is in the roofing materials business. One producer points out that more new and renovated homes are being roofed with synthetic roofing materials.

Overall growth is held back, however, by losses in such areas as detergents, which account for over one-quarter of silicates demand. Silicates tend to be used in conjunction with phosphates, and as detergent makers have reformulated away from phosphates for environmental reasons, silicates have suffered.

Liquid home laundry detergents are most popular in phosphate-ban areas where they work as well as, or better than, dry products as well as, or better than, dry products according to most accounts. Silicates producers note that soap makers are investigating the possibility of phosphate-containing liquids that would compete in the phosphate-banned market.

Silicate producers don't seem to be betting too heavily on a breakthrough here, however. No consumer demand for a phosphate-based liquid seems to exist.

### BASES & SALTS

CHLORALKALI

## HEAVY CHEMICALS

Plastics Inc. joins major chloralkali producers (ENR, 12/8/88, pg. 29) in announcing that chlorine and caustic soda price increases.

LCP says that chlorine prices will increase by 118 per ton while caustic soda will increase by \$15 per ton effective immediately as spot customers and according to terms in contract customers.

Also, the company says, effective January 1, 1989, the superfund tax on chlorine of \$2.70 per ton and \$36 per ton on caustic soda will appear as a separate item on all invoices.

LCP's list prices remain as follows: \$195 per ton for chlorine produced at Acme, N.C., and Brunswick, Ga., and \$200 per ton at Salisbury, Ohio, Moundsville, W. Va., Oradell, N.J., and Syracuse, N.Y.; \$220 per ton for regular grade caustic soda (50 percent brine) and \$240 per ton for rayon grade caustic soda at all production locations.

Also last week, Pennwalt Corporation announced a \$15 per ton increase in the price of

all grades off caustic soda, not to exceed current list prices. Pennwalt is also adding the superfund tax to all invoices.

Pennwalt announced an increase on chlorine about one month ago (ENR, 11/10/88, pg. 30). Pennwalt produces in the Pacific Northwest, and at the time it was suggested that the early chlorine announcement was in response to especially tight supplies in that part of the country, due to a strong pulp and paper market.

### Pfizer Inc. Obtains

Continued from Page 4

problems of octane requirement, emission control, fuel economy, engine efficiency and performance, and lubrication, FMC said.

Other products based on FMC's polarized hydrocarbon technology include pour-point depressants, oil additives and fuel stabilizers.

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## OSHA Determines the Risk Of Glycol Ethers to Workers

Occupational Safety and Health Administration says it has made a preliminary determination that occupational exposure to four glycol ethers poses a significant risk to workers which can be prevented or reduced through workplace regulation.

The agency is currently examining options for a proposed standard. OSHA's preliminary findings are said to affirm Environmental Protection Agency's assessment that occupational exposure to 2-methoxyethanol (2-ME), 2-ethoxyethanol (2-EE) and their acetates — commonly known as glycol ethers — may cause adverse reproductive, developmental, and hematologic effects. EPA estimated that between 200,000 and 350,000 workers are exposed to potentially unsafe levels of glycol ethers.

Last May, EPA formally referred these four glycol ethers to OSHA under the Toxic Substances Control Act after determining that exposures occur primarily in the workplace. Under TSCA, EPA may refer a substance to another federal agency if it finds that the substance poses an unreasonable health risk and the risk could be reduced by regulatory action by that agency.

OSHA analyzed EPA's evaluation of workplace risks and generally agreed with its findings. The agency made a preliminary determination that revised workplace standards for 2-ME, 2-EE, and their acetates appear economically and technologically feasible, that occupational exposure to these

substances may represent a significant risk, and that more stringent OSHA standards could reduce that risk.

Adverse health effects of these glycol ethers in several animal species include: testicular damage; reduced fertility; maternal toxicity; developmental abnormalities of the fetus; depression of the bone marrow and the immune system; and neurotoxicity. Epidemiologic studies and clinical reports have shown reductions in sperm count, gynecological disorders, hematologic effects, and neurotoxicity.

Current OSHA permissible exposure limits averaged over an eight-hour workday for these glycol ethers are: 2-methoxyethanol—25 parts 2-ME per million parts of air (ppm); 2-methoxyethanol acetate—25 ppm; 2-ethoxyethanol—200 ppm; and 2-ethoxyethanol acetate—100 ppm.

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## COATINGS & PLASTICS

### Gum Rosin and Turpentine Hurt by Imports, Substitutes

Imports and a full-scale substitution of tall oil rosin and other cheaper materials have hurt but destroyed the US market for gum turpentine and rosin, producers say.

Last week, Union Camp Corporation announced that it will discontinue production of gum rosin and gum turpentine by the end of this month.

Although the company will continue to supply rosin customers with its "Unitol" tall oil rosin grades, and will still distribute WW grades of imported gum rosin, a spokesman for the company says it "no longer makes sense" for them to stay in the gum rosin business. The firm intends to convert gum rosin capacity at its Valdosta, Ga. plant to synthetic resin production.

This leaves two players in the domestic gum rosin/turpentine market: FRP Inc. of Valley, Ga., and Shelton Naval Stores, Inc. of Vidalia, Ga. FRP, previously a subsidiary of Monsanto Company's paper sizing business, was recently acquired by Akzo Chemie America.

Currently, FRP is said to control from 75 percent to 80 percent of the market for domestic material. This has enabled it to remain in a market which has moved almost entirely offshore.

**HIGH-COST PRODUCTION**  
Production of crude gum rosin and gum turpentine is said to be highly labor intensive, reflected in significantly higher costs than those for materials with similar properties, such as tall oil rosin, and wood and sulfate turpentine. Lower labor costs have enabled producers abroad to offer large quantities of material at significantly lower prices than domestic material.

Gum turpentine is said to be selling between \$2.50 and \$2.65 per pound, as compared with \$2.00 per barrel for steam distilled wood turpentine and 90 cents per barrel for M-40 per barrel for crude sulfate turpentine.

Similarly, where gum rosin currently sells for 15 cents per pound to 58 cents per pound, wood rosin is priced between 32 cents per pound and 37 cents per pound, and tall oil rosin, between 25 cents per pound and 30 cents per pound.

Most of the gum material available on the market today is imported from China, Portugal and Brazil, producers say. Although domestic suppliers say it is generally of inferior quality, Chinese material is much cheaper than US material, and is said to dominate the export market in the US.

Whenever possible, users of gum products are turning to lower priced tall oil rosin, and wood and crude sulfate turpentine.

A spokesman for FRP Inc. estimates that the current market for gum rosin totals be-

tween 9.8 and 10 million pounds per year. The market for wood turpentine and rosin, he estimates, is between 2 and 3 times the size of that for gum.

Both markets, however, are dwarfed by the markets for tall oil rosin and crude sulfate turpentine.

Demand for tall oil rosin has been good this year, a spokesman for Union Camp, a

### PRICES TRENDLINES

WEEK ENDING DEC. 12, 1986

#### CHANGES/UP

None

#### CHANGES/DOWN

None

#### COATINGS INDEX

The Coatings & Plastics Index reflects the prices of 13 representative materials in this sector and the quantity of each produced in 1985.

|               |       |
|---------------|-------|
| Dec. 12, 1986 | 308.4 |
| Dec. 4, 1986  | 308.4 |
| Dec. 15, 1986 | 308.4 |
| Dec. 13, 1985 | 308.4 |

Chemical Prices Start on Page 40

major producer, asserts. Inventories are down significantly from last year, at 50 million pounds compared with 75 million pounds in 1985.

Statistics released by the Pulp Chemicals Association show the domestic market for tall oil rosin up almost 7 percent through September of this year, at about 350 million pounds.

Pulp Chemicals Association statistics show domestic demand for crude sulfate turpentine at 22,550,000 gallons, with inventories totaling 7 percent of the total market.

Prices have been holding steady at an average of 85 cents per gallon, but one producer, noting relatively high inventories, feels crude sulfate turpentine may fall in the months to come. This is not demand related, as the market for sulfate turpentine has been strong this year, he says.

Tall oil rosin demand is expected to grow over the next five years, as the material assumes shares of the adhesives, inks and sizing markets now dominated by petroleum (C<sub>6</sub> and C<sub>7</sub>-based) resins. The rosin predominates in some markets shared with polyterpene resins, particularly hot-melt adhesives.

Although lower-cost hydrocarbon resins have dominated the adhesive and ink markets for the past few years, with 65 percent of

Continued on Page 53

### COATING & PIGMENT IMPORTS: OCTOBER

CENSUS BUREAU REPORTS ON THE TOP PAINT MATERIALS.

|                                  | OCTOBER 1986 | SEPTEMBER 1986 |
|----------------------------------|--------------|----------------|
|                                  | QUANTITY     | VALUE          |
| Antimony oxide, lbs.             | 1,834,734    | 1,461,459      |
| Carbon black, lbs.               | 13,288,278   | 3,576,047      |
| Chrome oxide green, lbs.         | 1,114,412    | 1,061,415      |
| Molybdate orange, lbs.           | 110,846      | 111,406        |
| Yellow, lbs.                     | 268,048      | 109,268        |
| Zinc Yellow, lbs.                | 268,672      | 145,480        |
| Colony Oxide, lbs.               | 33,056       | 142,578        |
| Cuprous Oxide, lbs.              | 44,082       | 25,861         |
| Iron Oxide, lbs.                 | 561,086      | 668,784        |
| Iron Oxide, hydroxide, m/v, lbs. | 211,442      | 66,422         |
| Synthetic, lbs.                  | N/A          | N/A            |
| Black, lbs.                      | N/A          | 94,674         |
| Red, lbs.                        | 1,115,005    | 163,120        |
| Yellow, lbs.                     | 2,581,367    | 820,904        |
| Orange, lbs.                     | 708,782      | 423,765        |
| Red Lead, lbs.                   | 2,844,533    | 654,504        |
| White, lbs.                      | 70,000       | 15,480         |
| Black, bisulfide, lbs.           | 110,188      | 285,218        |
| Black, bisulfide, other, lbs.    | 82,086       | 125,581        |
| Lead Oxide, lbs.                 | 440,007      | 376,528        |
| Vanadium Oxide, lbs.             | 24,430,814   | 15,834,017     |
| Vanadium Oxide, lbs.             | 867,361      | 517,450        |
| Vanadium Oxide, lbs.             | 40,036       | 14,370         |
| Vanadium Oxide, lbs.             | 9,837,918    | 4,469,443      |
| Vanadium Oxide, lbs.             |              | 8,946,410      |
| Vanadium Oxide, lbs.             |              | 2,364,175      |

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December 16, 1986

CHEMICAL MARKETING REPORTER

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## PERFUMES & FLAVORINGS

### Heliotropine Pricing Climbs; Further Gains Expected Soon

Heliotropine prices have been firming in the past two weeks as producers weather the effects of increasing cocotea cymbarum oil prices and reports that availability of cocotea will be reduced in 1987. Demand, meanwhile, continues healthy with buyers trying to beat the expected institution of even higher prices.

Heliotropine is currently sold for \$9 to \$9.50 per pound on the US spot market, up from \$8 per pound a month ago. One buyer says \$9 per pound is the low end, even though small amounts are offered at that level. "Sales of larger quantities will probably not be discounted because producers are offering it at the lowest possible price."

"Though major domestic and foreign producers cite the cocotea cymbarum pricing as the reason for the heliotropine firming, the degree of increase in heliotropine does not reflect the full impact of the cocotea. "The price advances in heliotropine are not in direct proportion to those in cocotea," says an essential oils importer. "Both domestic and foreign producers are not as yet passing the increases on."

An aroma chemicals broker concurs that prices are being held down and suggests that domestic suppliers would have it otherwise. "They have come down to the \$9 range to keep competitive, even though they pushed for the \$10 to \$11 per pound range."

A representative of the major domestic producer of heliotropine does foresee the price firming toward \$11 per pound. He says that production levels will not be affected by the cocotea situation and that no new sources of demand exist. "We do not see a surge in new business."

**JAPAN PRIMARY SOURCE**  
The primary foreign sources of heliotropine competition are Japan with over 70 percent of imports, Brazil with about 17 percent and China at about 10 percent. Figures are based on total imports from January through October, 1986, a cumulative of 251,533 pounds.

Japanese producers are confronted by the strengthened yen which, while not affecting raw material prices, works against them in terms of labor and fixed costs. "We have been compelled to raise prices," says a spokesman for the major Japanese heliotropine exporter, "because of the yen and the advancing costs of cocotea cymbarum oil."

He adds that \$9 per pound is currently a higher end quote and that they will try to move prices up in the near future. "The competition from Brazil has been making it difficult for us to raise prices."

The other major heliotropine exporter to the US, China, has been characterized as temporarily out of the picture by industry sources. The most common reason cited for their decreasing exports is domestic consumption. "The Chinese are not offering any heliotropine," says an aroma chemicals broker, "though they're reportedly still buying the cocotea."

Cocotea cymbarum oil prices have increased steadily in the past month for several reasons (CMR 11/3/86 p. 47). But aside from the emergence of China as a buyer, sources point to the rising popularity of its derivatives (piperonyl aldehyde and piperonyl butoxide) as synergists in producing insecticides for the stimulation of cocotea sales. "If there's pressure on cocotea," says an aroma chemicals dealer, "it isn't because of heliotropine demand but rather the piperonal derivatives used in insecticides."

Outlooks for heliotropine pricing settle on gradual increases. In light of the current climate where people are selling "with little or no profit so they at least show no decline in sales," a market analyst says the situation will give way to the \$11 range.

However, one industry observer notes that "the major trend will be to a weaker yen and

a stronger dollar," suggesting that if the Japanese can hold their pricing levels down long enough, they may be able to keep them there.

### AROMA CHEMICALS

**BENZYL ACETATE** — Chinese benzyl acetate prices dropped last week in an attempt to remain competitive with European and

### PRICES TRENDLINES

WEEK ENDING DEC. 12, 1986

#### CHANGES/UP

Allspice, Central American, 2c. per lb.  
Anatto seed, Dominican, 23c. per lb.  
Cinnamon, H-2, 8-10c. per lb.  
Cinnamomum oil, 5c. per kilo  
Citronella oil, 25-30c. per kilo  
Eucalyptus oil, Australian 70%, 20c. per kilo  
Eucalyptus Chlorodora, Chinese, 20-30c. per kilo  
Limonene oil, 35c. per lb.  
Nutmegs, East Indian delivered, 3c. per lb.  
Ocotea, Chinese, 10c. per kilo  
Pepper, black, 7-8c. per lb.  
Peppermint oil, 40c. per kilo

#### CHANGES/DOWN

Anise seed, Spanish/Turkish, 3-7c. per lb.  
Benzyl acetate, Chinese, 25-30c. per lb.  
Camphor oil, 1,070, 40c. per kilo  
Chillies, Chinese Zhejiang, 3c. per lb.  
Cloves, Madagascar/Sri Lanka, 5c. per lb.  
Juniperberry oil, rectified, \$5 per kilo  
Turmeric, Alleppy 3-8%, 1c. per lb.

#### PERFUMES INDEX

The Parfuma & Flavorings Index reflects the prices of 11 representative materials in this sector and the quantity of each supplied in 1985.

|               |       |
|---------------|-------|
| Dec. 12, 1985 | 71.00 |
| Dec. 5, 1985  | 71.00 |
| Nov. 14, 1985 | 71.00 |
| Dec. 13, 1985 | 71.00 |

Chemical Prices Start on Page 36

Mexican producers (CMR 11/24/86 p. 28). Sources report a decline of 25c. to 40c. in shipping prices from mainland China to around \$1.75 per kilo cost and freight insured. Supplies are considered easy with inventories well stocked from large quantity sales earlier this year.

### ESSENTIAL OILS

**PEPPERMINT OIL** — Yakima native peppermint oil shipping prices increased 10c. per pound last week to \$8.75 to \$9 per pound. The firming, according to an essential oils broker, was in response to a "furry of business; major sales were made." As a consequence, the amount of peppermint oil available for marketing is a matter of concern for buyers.

According to a peppermint oil grower, however, supplies of peppermint oil are adequate and will remain so through the 1987 harvest. "We've had two very good growing years. Of the 750,000 pounds available for sale two years ago, about 250,000 pounds remain. He adds that because too few are taking peppermint acreage out of production, the price ceiling from field will be per pound.

Another grower agrees, saying that the level could be breached only by a concerted effort. The problem, he stresses, is that "there is really no alternative except the farmers to turn to. They're leaving the old stands in because they want the yield 'old stand' is a plant in its third or fourth year of production."

**SPEARMINT OIL** — Far West spearmint oil is not suffering from as aggressive oversupply situation as earlier reported in this column (CMR 11/10/86 p. 27). An analyst of the Federal Marketing Service notes that major spearmint oil

Continued on Page 36

## Consumers Get Top Packages, Says Food Processors Group

Quality assurance programs by food manufacturers, together with government monitoring efforts, assure consumers that domestic packaged foods are free of illegal pesticide residues, says the National Food Processors Association.

The association responded to reports issued by the General Accounting Office, which alleged that the Food & Drug Administration does not provide adequate surveillance of pesticide residues in imported and domestic foods.

NFPA said domestic food manufacturers carefully police incoming stocks of raw products to assure that they do not contain illegal pesticide residues. A part of the monitoring effort by industry is NFPA's "protective areas program," which the trade group said assures that growers comply with restrictions on pesticide use.

Processors test for pesticide residues in their own laboratories and use such scientific facilities as the NFPA's research laboratories. The trade group said in addition to monitoring incoming raw commodities, processors wash, peel, blanch and process the raw product in ways that assure that residues within allowable tolerance levels are further reduced or eliminated.

The industry programs, in place for several years, are supplemented by the monitoring programs of state agencies and of both Food and Drug Administration and the Agriculture Department.

"Our industry has supported full funding of the budget requested by FDA so that the agency can adequately carry out critical food safety work in such areas as improving microbiological surveillance, new product approvals and screening, and stepping up surveillance of imports to assure that they meet the same standards of safety and wholesomeness as domestically produced products," says Charles J. Carey, president of NFPA.

"We believe that FDA's current surveillance programs for pesticide residues, coupled with the self-policing programs that US industry has long undertaken, are doing a good job with respect to domestic foods," says Mr. Carey.



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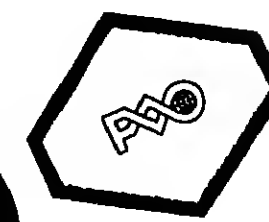
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## Polyglyceryl Esters

DREWPOL® SERIES OF ESTERS  
TAILORED TO MEET YOUR HLB REQUIREMENTS  
APPLICATIONS AS EMULSIFIERS, CRYSTALLIZATION  
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WEEK ENDING DEC. 12, 1986

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# CHEMICAL PRICES

WEEK ENDING DEC. 12, 1986

|  |       |     |
|--|-------|-----|
| Gluc. bone, extracted, green, jelly-grams, bgs., c.i., f.o.b. ....           | 85    | 96  |
| 115 jellygrams, bgs., c.i., f.o.b. ....                                      | 78    |     |
| 135 jellygrams, bgs., c.i., f.o.b. ....                                      | 77    |     |
| 184 jellygrams, bgs., c.i., f.o.b. ....                                      | 79    |     |
| 184 jellygrams, bgs., c.i., f.o.b. ....                                      | 87    |     |
| 280 jellygrams, bgs., c.i., f.o.b. ....                                      | 93    |     |
| Gluc. lio. ....  | 88    |     |
| 108 jellygrams, bgs., t.f., l.o.b. ....                                      | 93    |     |
| 135 jellygrams, bgs., t.f., l.o.b. ....                                      | 95    |     |
| 164 jellygrams, bgs., t.f., l.o.b. ....                                      | 90    |     |
| 192 jellygrams, bgs., t.f., l.o.b. ....                                      | 95    |     |
| 228 jellygrams, bgs., t.f., l.o.b. ....                                      | 100   |     |
| 251 jellygrams, bgs., t.f., l.o.b. ....                                      | 105   |     |
| 283 jellygrams, bgs., t.f., l.o.b. ....                                      | 110   |     |
| 315 jellygrams, bgs., t.f., l.o.b. ....                                      | 115   |     |
| 347 jellygrams, bgs., t.f., l.o.b. ....                                      | 120   |     |
| 378 jellygrams, bgs., t.f., l.o.b. ....                                      | 120   |     |
| 411 jellygrams, bgs., t.f., l.o.b. ....                                      | 125   |     |
| 444 jellygrams, bgs., t.f., l.o.b. ....                                      | 135   |     |
| 477 jellygrams, bgs., t.f., l.o.b. ....                                      | 140   |     |
| Glutamic acid, 89.1% dms., 100-lb. lots, frt. addl. ....                     | 6.65  |     |
| USP, nat. red, USP, CP 99.9% tanks, divid. ....                              | 99%   |     |
| Glycer. CP, nat. 98% tanks, divid. ....                                      | 87%   |     |
| Syn. 98%, tanks divid. ....  | 99%   |     |
| Syn. 99.5% tanks divid. ....   | 91    |     |
| Glycine (see Aminocaproic acid) ....   |       |     |
| Glyceryl p-stearate 100-lb. lbs. dms. f.o.b. ....                            | 14.50 |     |
| Glycolic acid (see Hydroxyacetic acid) ....                                  |       |     |
| Glyoxal 40% aq. soln., bulk, tanks, divid. ....                              |       |     |
| Onaphthalic ac. Fla. dms. ....   | 3.00  |     |
| Cell, dms. ....  | 3.02  |     |
| Isolact. ....  | 3.00  |     |
| Graphite, amorph. powd., bgs. dms. ex-whse ....                              | 18    | 40  |
| cryst. 88-90% powd., bgs. dms. ex-whse ....                                  | 30    | 60  |
| Graphite, cryst., 90-92% powd., bgs. dms. ex-whse ....                       | 40    | 75  |
| 95-96% pruvl. bgs. dms. ex-whse ....   | 60    | 90  |
| Graphite, amorph. cryst. 97% and up, powd. bgs. dms. ex-whse ....            | 80    | 120 |
| Graphitic flake, No. 1, 90-95% bgs. dms. ex-whse ....                        | 65    | 75  |
| No. 2, 90-95% bgs. dms. ex-whse ....   | 65    | 75  |
| Grass (See Oils, Fats & Waxes market report)                                 |       |     |
| Grasses oil (See Lard oil)   |       |     |
| Guaiacol, tech. 500-lb. cans, 24,000 lb. min. f.o.b. Wallingford, Conn. .... | 2.70  |     |
| Quaternized, dms. ....   | 3.75  |     |
| Gum gum, arabic, bgs., c.i., f.o.b. shp't pt. ....                           | 50    | 75  |
| Indust. bgs., high viscosity, c.i., same basis, f.o.b. ....                  | 50    | 85  |

|   |       |       |
|---|-------|-------|
| Hellotropin, dms. ....  | 8.00  | 9.25  |
| Hemlock (See Spruce oil)  |       |       |
| Herbicide leaves, tanks, l.o.b. Beaumont, Tex. ....                     | 1.07  |       |
| 95% tanks, l.o.b. Houston, Tex. ....                                    | 1.18  |       |
| Hexahydric acid, syn. tanks, l.o.b. ....                                | 1.95  |       |
| Hexahydric acid, tanks, l.o.b. ....                                     | 43%   |       |
| Hexahydrophthalic anhydride, tech. dms., l.f. l.o.b. works ....         | 1.42  |       |
| Hexamethylenetetramine, gran. bgs., c.i., l.f. works ....               | 65    |       |
| Hexamethylenetetramine, tanks, l.o.b. gran. dms., c.i., l.f. works .... | 81    |       |
| Hexamethylenetetramine, tanks, l.o.b. powd. dms., c.i., l.f. works .... | 80    |       |
| Hexane, indus. tanks, works ....  | 1.01  | 1.15  |
| 95% tanks, f.o.b. Houston, Tex. ....                                    | 1.12  |       |
| Hexanediol, syn. tanks, l.o.b. ....                                     | 1.50  |       |
| Hexyl alcohol, mixed isomers, tanks ....                                | .32   |       |
| p-Hexyl methacrylate, dms., c.i., works ....                            | .76%  |       |
| Hexylene glycol, tanks, dms. ....                                       | .50   |       |
| Hexylenediol, USP dms., 25-lb. lots or more, frt. addl. ....            | 30.00 |       |
| Homotropine hydrobromide, USP, 10-100-oz. lots, bates. ....             | 10.25 | 11.30 |
| Homotropine methylbromide, USP, 10-100-oz. lots, bates. ....            | 9.70  | 10.70 |
| Hydroalcohol, tanks, l.o.b. ....  | .25   | .28   |
| Hydroxide hydride, 85%, l.f., frt. addl. ....                           | 1.64  |       |
| 55-gal. dms., l.f., frt. addl. ....                                     | 1.81  |       |
| Hydroxide acid, tech., 47%-57% 2-b. ....                                | 7.60  |       |
| Hydroxybenzyl alcohol, tech., solid, dms., c.i., l.o.b. zone 1 ....     | .85   |       |
| tanks, l.o.b. zone 1 ....   | .90   |       |
| Hydrobromic acid, 48% dms., c.i., f.o.b. ....                           | 38%   |       |
| Hydrochloric acid, anhyd. (see Hydrogen chloride)                       |       |       |

|  |        |        |
|--|--------|--------|
| Gall, dms., frt. addl. 100% basis.....                       | 2.30   | -      |
| Gall acid, 400-lb. units.....                                | 23.00  | -      |
| Gastic oil, dms., Egyptian.....                              | 100.00 | 110.00 |
| Gelatin, edible, 100 ADAC test, dms., l.f. l.o.b. works..... | 1.50   | 1.75   |
| 125 ADAC test, dms., l.f. l.o.b. works.....                  | 1.75   | 1.85   |
| 160 ADAC test, dms., l.f. l.o.b. works.....                  | 1.85   | 2.05   |
| 175 ADAC test, dms., l.f. l.o.b. works.....                  | 1.95   | 2.05   |
| 200 ADAC test, dms., l.f. l.o.b. works.....                  | 2.05   | 2.15   |
| 225 ADAC test, dms., l.f. l.o.b. works.....                  | 2.10   | 2.25   |
| 250 ADAC test, dms., l.f. l.o.b. works.....                  | 2.20   | 2.35   |
| 275 ADAC test, dms., l.f. l.o.b. works.....                  | 2.30   | 2.45   |
| 300 ADAC test, dms., l.f. l.o.b. works.....                  | 2.50   | 2.65   |
| Garden violet (see Methylrosaniline chloride)                | -      | -      |
| Geraniol, syn., 90-92% dms.....                              | 5.45   | 6.00   |
| nat., dms.....   | 5.80   | -      |
| syn., 90-92% dms.....  | 5.75   | -      |
| syn., 90-95% dms.....  | 46.00  | -      |
| Bourbon.....   | 65.00  | -      |
| Chinese.....   | 22.75  | -      |
| Egypt.....   | 23.00  | -      |
| Geranyl acetate, dms.....                                    | 5.45   | 6.00   |
| nat., dms.....   | 5.80   | -      |
| Geranylfornate, syn., dms.....                               | 15.85  | -      |
| nat., dms.....   | 15.85  | -      |
| Glycerol, p.e. bulk, c.i., f.o.b. Sonoma, Calif.....         | 180.00 | -      |
| electrics, same basis.....                                   | 60.3   | .65    |
| Ginger, Cochiti, bgs.....                                    | .56    | -      |
| Chinese.....   | 35.00  | 44.00  |
| Ginger oil, Chinese.....                                     | 65.00  | -      |
| Indian.....  | 65.00  | -      |
| Ginger oleoresin, NF, bates.....                             | 30.00  | -      |
| Glauber's salt (see Sodium sulfate)                          | -      | -      |
| Gluconic acid, tech. 50% dms., c.i., l.f. l.o.b. works.....  | .50    | -      |
| tanks, same basis.....                                       | .44    | -      |

December 15, 1986

CHEMICAL MARKETING REPORTER

WEEK ENDING DEC. 12, 1986

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## WEEK ENDING DEC. 12, 1988

Perchloroethylene, dry cleaning grade,

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## WEEK ENDING DEC. 12, 1988

Sorbitan monostearate, dms., o.l., l.l.,  
30,000 lb. min. to 1 lb.



WEEK ENDING DEC. 12, 1986

|   |          |        |        |
|---|----------|--------|--------|
| Sulfuric acid, virgin 100% tanks, works.  |          |        |        |
| East Coast  | ton      | 71.75  | 85.90  |
| Gulf Coast  | ton      | 75.00  | 86.40  |
| Midwest   | ton      | 80.25  | -      |
| South Coast   | ton      | 88.15  | -      |
| West Coast  | ton      | 85.00  | -      |
| NOTE: For prices on 60 and 68 lb. multiply by .7767 or .7767 x .8310, respectively. For price of 20% fuming sulfur, add \$3.54 to above prices and multiply by 1.045. |          |        |        |
| Sulfuric acid, virgin, 100% tank, works.  |          |        |        |
| Gulf Coast  | ton      | 48.00  | 52.00  |
| New Mexico  | ton      | 28.00  | 25.00  |
| Southwest   | ton      | 63.00  | 65.00  |
| 3unit/oversized oil crude, 1.0 lb. Minneapolis  | ton      | 14½    | .16    |
| Superphosphate, triple, 48% or more.  |          |        |        |
| e.p.s., run-off pile, bulk, c.i.  | unit-ton | 2.75   | 3.05   |
| bulk, gran., c.i., Fla.   | ton      | 160.00 | 185.00 |

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|  |      |               |
|--|------|---------------|
| Talc, dom., grd. New York bgs. a.i.                  |      |               |
| worls.....   | ton  | 84.00         |
| 92%, 65 mesh bags, c.l.                              |      |               |
| works.....   | ton  | 84.00 90.00   |
| Talc, dom., 85-95, 400 mesh, m-                      |      |               |
| icronized bgs, c.l., works..                         | ton  | 187.00 238.00 |
| 65 mesh, micronized, bgs,                            |      |               |
| c.l., works.....                                     | ton  | 200.00 -      |
| dom., ord., Calif. grd. bgs, c.l.                    |      |               |
| works.....   | ton  | 93.00 -       |
| ord., Vermont, off-color grd., bgs,                  |      |               |
| works.....   | ton  | 138.00 -      |
| imp., Canadian, grd., bgs, c.l.                      |      |               |
| works.....   | ton  | 70.00 84.00   |
| Tell oil, crude, Southeast, tanks,                   |      |               |
| vcr mesh, 40 mesh bags, c.l.                         |      |               |
| oil, refid., adsl, same basis ..                     | lb.  | .31 -         |
| dsl, tanks, same basis ..                            | lb.  | .19 .23       |
| Tell oil acids, 2% or more resin, tanks,             |      |               |
| work, frt. equist. ....                              | lb.  | 20% 23        |
| less than 2% resin acid ..                           | lb.  | 22 .27        |
| Tallow (see Ole. Fats & Waxes market report.)        |      |               |
| Tallow, fatty acids, tech., non-ref.                 |      |               |
| c.l., dhd.....                                       | lb.  | .37 .40       |
| tanks, chd.....                                      | lb.  | .28 .45       |
| hydrogenated, tech., flake, bgs, c.l.                |      |               |
| divd.....  | lb.  | .37 .33       |
| tanks, dhd.....                                      | lb.  | .35 .42       |
| tanks, dms., f.o.b. ....                             | lb.  | 8.50 8.50     |
| lithian, dms.....                                    | kilo | \$2.90 -      |
| Tankage, animal feeding, 8-11% NH <sub>4</sub> ,     |      |               |
| New York bks., ..... unit-ton                        |      | 5.50 -        |
| Tankage, farm, grade (see Nitrogen process tankage). |      |               |
| Tannic acid, NF, fluffy bds., 1,000-lb.              |      |               |
| lots.....  | lb.  | 6.08 -        |
| tech., off-white, dms., f.o.b.                       |      |               |
| Jersey, dhd.....                                     | lb.  | 4.62 -        |
| 25-28%, 11 dms., f.o.b. works, gal.                  |      |               |
| 50-53%, 11 dms., f.o.b. works, gal.                  |      |               |
| Tartrate acid, HF, bgs.....                          | lb.  | 1.69 -        |
| Tartronic melon seed, dms., work, lb.                |      |               |
| Terpin hydrate, NF, imp., crystal, powd.,            |      |               |
| 36 kilo drums, f.o.b. ship. pt.,                     |      |               |
| frt. triquad.....                                    | lb.  | 1.35 -        |
| Terpineol, dms.....                                  | lb.  | 1.10 1.50     |
| Terpinyl acetate, dms.....                           | lb.  | 2.40 -        |
| prima, dms.....                                      | lb.  | 1.33 2.05     |
| Terpinyl propionate, dms.....                        | lb.  | 4.50 -        |
| Tetrasulfuric acid, tech. (see Perschlorethylenes),  |      |               |
| L.I. works.....                                      | lb.  | .30% -        |
| Tetraethyl orthosilicates, bulk, f.o.b.              |      |               |
| works.....   | lb.  | 1.53 1.88     |
| Tetraethene glycol dimethyl ether, dms.,             |      |               |
| f.o.b. works.....                                    | lb.  | .87 -         |
| Tetraethylene glycol diacrylate, i.l.                |      |               |
| dms., f.o.b. works.....                              | lb.  | 1.50 -        |
| Tetraethylenepentamine, tanks, same                  |      |               |
| basis.....   | ton  | 1.70 1.75     |
| Tetraethylthorium disulfide, tech.,                  |      |               |
| flake, dms., 11, frt. adsl.....                      | lb.  | .88 2.07      |
| Tetrahydric acid, dms., c.l., l.i., f.o.b.           |      |               |
| works.....   | lb.  | 1.02 -        |
| tanks, same basis ..                                 | lb.  | .96 -         |
| Tetrahydrofurfuryl alcohol tania, f.o.b.             |      |               |
| Memphe, Tenn.....                                    | lb.  | 9.00 -        |
| Tetrahydroindol synth., dms.....                     | lb.  | .70 -         |
| Tetrahydroxyphthalic anhydride dms.,                 |      |               |
| c.l., L.I. f.o.b. works.....                         | lb.  | .65 -         |
| Tetracosam phosphat (see Potassium phosphate, tetra- |      |               |
| hydrate) sodium phosphite (see Sodium pyrophosphate, |      |               |
| tetrahydrate)  |      |               |
| Thallium metal, dms.....                             | lb.  | 35.00 -       |
| Thallium sulfate, 99%, bats, dhd, kilo               |      |               |
| Thalocyanine, dms.....                               | lb.  | 140.00 150.00 |
| Theophylline, USP, anhyd. 50-kilo                    |      |               |
| drums, 10-1000-kilo lots ..                          | kilo | 12.00 12.95   |
| Thiamine hydrochloride, USP, 100-kilo                |      |               |
| drums, dhd.....                                      | kg.  | 33.00 -       |
| thiamine monochloride, USP, 100-kilo                 |      |               |
| dms., dhd.....                                       | kg.  | 33.00 -       |
| Thiodiphenol, 68%, dms., f.o.b.                      |      |               |
| works.....   | lb.  | 3.35 -        |
| Thioflavin green toner, thioflavin,                  |      |               |
| PMA, dms.....  | lb.  | 5.40 8.05     |
| tungstated, PTA, dms.....                            | lb.  | 5.80 5.85     |
| Thiovaleric acid, fvd, dms., ton lots                |      |               |
| with 20% adsl, basic.....                            | ton  | 2.07 -        |
| Thionigold maroon, dms., frt. adsl, lb.              |      |               |
| reds, dms., frt. adsl.....                           | lb.  | 7.58 8.12     |
| Thionyl chlorides, high-purity, 98.9%                |      |               |
| 24,000-lb. min. ....                                 | lb.  | -             |
| equival.....   | lb.  | .55 -         |

|   |         |       |
|---|---------|-------|
| Thorium nitrate, purif., dms., 100-lb. lots or more, works.   | 2.75    | -     |
| d-Threonine, dms., 100 kilos wts.   | 128.00  | -     |
| Thyme leaves, French, bgs.  | 1.45    | -     |
| Spanish, bgs.   | 7.75    | -     |
| Thymol, N.F., dms., divd.   | 20.00   | -     |
| KF, white, dms.   | 22.00   | 8.16  |
| Thymol, N.F.  | 3.75    | -     |
| Thymol iodide, dms., 100-lb. lots.  | 52.30   | 56.20 |
| Tin metal (99.999% pure)  | N.A.    | -     |
| Titanium dioxide, anatase, bgs., 20-ton lots, lrt. sold.  | .77     | .79   |
| slurry shipments, 50-ton lots, dry basis, lrt. sold.  | .78     | -     |
| Titanium dioxide, rutile, reg. bgs., 20-ton lots, lrt. sold.  | .81     | .84   |
| slurry shipments, 50-ton lots, dry basis, lrt. sold.  | .84     | -     |
| Non-chlorinated metal carbide, i.c. per pound sold.   | -       | -     |
| Titanium hydride powd. electronics grade, dms.  | 26.50   | -     |
| Titanium tetrachloride, tech., bulk, 0.1, 1, 5, 10, 20, 50, 100, 200, 500, 1,000, 2,000 gal. cylinders c.i., same basis | .30     | .36   |
| Titanium sponges, 99.93%, fiber drums, less than 6,000 lbs. to b.w.   | 4.85    | -     |
| Tablets ctd., 2,000 lbs. dms.   | 2.45    | -     |
| d-Tocopherols, 87% dms.   | 50.08   | -     |
| d-Tocopheryl acetate, 81% conc., dms.   | 57.48   | -     |
| d-Tocopheryl acid succinate, dms.   | 78.44   | -     |
| d-Tocopherol, dms.  | 27.40   | -     |
| d-Tocopheryl acetate, USP 80-kilo dms., 100-kilo min.   | 18.00   | 18.50 |
| 50% concd., 50-lb. dms.   | 17.00   | -     |
| Tolu balsam, dms.   | 7.80    | 8.68  |
| Toluene, petroleum, ind. or nitrilation, tanks  | -       | -     |
| Atlanta, Ga., divd.   | .70     | -     |
| Bacon, N.J., divd.  | .70     | -     |
| Baytown, Tex., l.o.b.   | .70     | -     |
| Chicago, Ill. divd.   | .70     | -     |
| Clifton, Pa., l.o.b.  | .70     | -     |
| Deer Park, Tex., l.o.b.   | .70     | -     |
| Ft. Wayne, Ind., divd.  | .70     | -     |
| Gulf Coast, spot, barges  | .89     | .70   |
| Houston, Tex., divd.  | .70     | -     |
| New Jersey Metro, divd.   | .70     | -     |
| Philadelphia, Pa., divd.  | .70     | -     |
| Providence, R.I., divd.   | .70     | -     |
| Toluene d-isocyanate (mixed isomers), 80%, 2,4- and 20% 2,6-isomers, tanks  | 1.01    | -     |
| p-Toluenesulfonic acids, powd., dms., 1,1, works  | 3.55    | -     |
| m-Toluidine, tech., bulk  | 3.10    | -     |
| p-Toluidine, tech., lrt. dms. at lrt.   | .12     | .76   |
| o-Toluidine, tech., c.i. l.o.b. works   | .60     | .64   |
| p-Toluidine, tech. chem. sold., dms., c.i. works  | 1.80    | 1.86  |
| l.c., tanks, same basis   | 1.70    | -     |
| flexa, same basis   | 1.95    | -     |
| Tolidines, mixed, o-m-p, l.c. liquid, c.i. l.o.b. works   | 1.03    | -     |
| bulk same basis   | .95     | -     |
| Trinitroacetic dms., 1,000-lb. lots, l.o.b.   | 2.30    | -     |
| Trinitro, c.i.  | 2.90    | -     |
| Tonks beans, Angostura, prime, 1,000-lb. lots   | 6.50    | -     |
| Tosphenes, dms., c.i., 1,1, works   | .38     | -     |
| Trapped oil, 100 gal. tanks   | 25.00   | 40.00 |
| laked powder  | 16.00   | -     |
| Tricelactin tanks, divd. E.   | .75     | -     |
| Tricetyl citrate, 1,1, drums, l.o.b.  | 1.70    | -     |
| Tricetyl phosphate, tanks, divd.  | 1.65    | 1.77  |
| Tricetylamine, dms., c.i., divd.  | 1.39    | -     |
| tanks, same basis   | 1.33    | -     |
| Trichloroacetic acid, tech., 300-lb. tanks, c.i. l.o.b.   | .84     | -     |
| USP, 100-lb. dms., lrt. equivd.   | .96 1/2 | -     |
| 1,2,4-Trichlorobenzene, pure, tanks   | .61 1/2 | -     |
| 1,1,1-Trichloroethane, tanks, ethylene, divd.   | .40 1/2 | -     |
| 1,1,2-Trichloroethane, tanks, l.o.b. works  | .42     | -     |
| Trichloroethylene, tanks  | 1.28    | -     |
| Trichloroethylene, dms., c.i.   | .39 1/2 | -     |
| Trichlorophenylacetic acid (see 2,4,5-T).   | -       | -     |
| Trichlorine citrate, 86% soln., non-ret. dms., 1,500-lb. lots, divd.  | 1.35    | -     |
| Tricresyl phosphate, tanks, l.o.b. works  | 1.80    | 1.78  |
| Tricetyl alcohol, mixed isomers, tanks, divd.   | .67     | -     |
| Tricetylamine, 99.1%, 1,000-gal. divd. E.   | .35     | .37   |
| 96%, tanks, same basis  | .35     | .37   |
| Triethanolamine lauryl sulfate, tanks, l.o.b. works   | .27 1/2 | .27   |
| Triethylene glycol, c.i., divd.   | 1.33    | -     |
| tanks, same basis   | 1.20    | -     |
| Triethyl citrate, 1,1, drums, l.o.b. works  | 1.82    | -     |
| Triethyl phosphates, tanks, divd.   | 1.16    | -     |
| Triethylene glycol, 1,000-gal. tanks  | .49     | -     |
| Triethylene glycol dipelargolate, tanks l.o.b. works  | .27     | .65   |
| 40-60% tanks, 100% basis, lrt. equivd.  | .36     | -     |
| Triethyleneisocyanate, tanks  | 1.42    | 1.48  |
| Tri-iso-butyltrimellitate, l.o.b. works   | .51     | .56   |
| Tri-iso-butylene, tanks, divd.  | .48     | -     |
| Tri-isopropylamine, dms., c.i., lrt. sold.  | .67 1/2 | -     |
| Trimethylamine, enhyd., tanks, lrt. equivd., 100%   | .64 1/2 | -     |
| 25% soln., tanks, lrt. equivd., 100%  | .53     | -     |
| 40% soln., tanks, lrt. equivd., 100%  | .58 1/2 | .6    |
| Trimethylpropylene glyc c.i. l.o.b. divd.   | 1.73    | -     |
| Trimethylolpropane triacrylate, l.o.b. dms., l.o.b. works   | 1.60    | -     |
| Triphenylarsenite, tanks, lrt. sold.  | 1.00    | -     |
| Triphenyl phosphates, dms., 1,1, lrt. equivd.   | 1.84    | .7    |
| Tripropylene glycol, 250-gal. tanks   | .84     | -     |
| Tri-(hydroxymethyl)nitromethane, solid, 1,1, works  | .605    | -     |
| Trisodium phosphate (see Sodium phosphate, trisodium)   | 62      | 65.0  |
| Tri-L-tyrosine, 250-gal. tanks  | .31     | .3    |
| Tung oil, tanks, imp. New York  | 12.85   | -     |
| Tungstic acid 92 1/2%, dms., 1,750-8,000 lbs. works   | .83     | -     |
| Turnerite, 100% pure  | .87     | -     |
| Turnerite, Apepsey over 6%  | .87     | -     |

|   |        |       |
|---|--------|-------|
| Turpentine, crude sulfated larks, f.o.b. Southeast works  | 90     | 1.00  |
| <b>U</b>  |        |       |
| Ultramarine blue pigments, 550-2,000 lb. lots, works  | 1.30   | -     |
| violet, same base   | 2.20   | -     |
| Usher pigments, bulk, Amersol, f.o.b. equivalent  | 13½¢   | 15½¢  |
| amber, Amersol, dom. bgs., i.c.f., same base  | 13½¢   | 14½¢  |
| black, Amersol, dom. bgs., i.c.f., same base  | 2.70   | -     |
| Ureac, 48% N, Ind. bulk, Gulf Coast, 50-ton c.t.  | 200.00 | -     |
| 48% N, agricultural, barges, f.o.b.   | 75.00  | 60.00 |
| 48% N, agricultural, f.o.b. Midwest Terminal, granular  | 100.00 | -     |
| Uve-Ural leaves, bla.   | .22    | -     |
| <b>V</b>  |        |       |
| Valerian root, Baiglen, bgs.  | .85    | .85   |
| Indian, bgs.  | .45    | -     |
| Vanadium oxytrichloride, 3,000 lb. cys., works  | 5.40   | -     |
| Vanadium pentoxide, tech. pur., per lb. of V <sub>2</sub> O <sub>5</sub> , 550-lb. dms. works   | 1.10   | 4.64  |
| (used or flake, per lb. V <sub>2</sub> O <sub>5</sub> , 550-lb. dms., works)  | 3.35   | 3.85  |
| Vandyshe color, bgs., f.o.b. equivalent   | 27¢    | -     |
| Vanille beans, Madagascar   | 37.00  | -     |
| Java, fms.  | 27.00  | 30.00 |
| Vanillin, USP, dms., f.o.b. works   | 6.25   | -     |
| Velvetex, Borden, dms.  | 4.75   | 5.00  |
| Veronal A.D.  | .84    | -     |
| Vetivervy acetate, dms.   | 60.50  | -     |
| excise  | 63.00  | -     |
| Vetiver, Borden, dms.   | 48.00  | -     |
| Chinese   | 18.00  | -     |
| Haitian   | 28.50  | -     |
| Java  | 34.00  | -     |
| Victoria blue (lens), polydisperse, PMA dms.  | 8.20   | 6.30  |
| tungstated, PTA, dms.   | 10.40  | -     |
| Vinyl acetate monomer, tanks, divd.   | .39    | -     |
| Vinyl chloride monomer, polymer grade, tanks, l.o.b. works  | .28    | -     |
| Vinyl ether, USP, anesthetics, 75-cc. bots, hospitals   | 1.66   | -     |
| 2-Vinylpyridine I, dms. works   | 7.81   | -     |
| tanks, works  | 7.81   | -     |
| Vinyltoluene, bulk, f.o.b.  | .67    | .73   |
| Vitamin A, synthet, dry, gram, 500,000 units per gram, 500 mg. lfo  | 31.00  | -     |
| Vitamin A, lfo, oil, gram, 1,800,000 A units per gram, 10 kilo lots   | 43.00  | -     |
| Vitamin A, food grade, 650,000 units per gram   | 18.70  | 23.85 |
| Vitamin B <sub>1</sub> (see Thiamine hydrochloride)   |        |       |
| Vitamin B <sub>12</sub> (see Riboflavin and Yeest)  |        |       |
| Vitamin B <sub>12</sub> , crystal, non-sterile, USP (cyanocobalamin), vials, 50-gram lots   | 8.00   | 6.75  |
| Vitamin B <sub>12</sub> , f <sub>12</sub> (retention of cury, 6-2 (cyanocobalamin USP) with dicalcium phosphate, 25-kilo dms, kilo                  | 10.76  | 12.75 |
| Vitamin B <sub>12</sub> , f <sub>12</sub> (retention of cury, 6-2 (cyanocobalamin USP) with mannitol, 25-kilo dms., USA, kilo                       | 15.80  | -     |
| Vitamin B <sub>12</sub> , cobalamin concentrate NF with mannitol, 50-gram lots, per gram, dms.  | 19.45  | -     |
| Vitamin B <sub>12</sub> , f <sub>12</sub> (retention of cury, 6-2 (cyanocobalamin USP), absorbed on resin, 5-kilo dms., 500-gram lots, f.o.b. works | 15.85  | -     |
| Vitamin B <sub>12</sub> , f <sub>12</sub> (retention of cury, 6-2 (cyanocobalamin USP), absorbed on resin, 5-kilo dms., f.o.b. per gram activity    | 15.40  | -     |
| Vitamin B <sub>12</sub> , f <sub>12</sub> (retention of cury, 6-2 (cyanocobalamin USP), absorbed on resin, 5-kilo dms., f.o.b. per gram activity    | 15.40  | -     |
| Vitamin C (see Ascorbic acid)   |        |       |
| Vitamin D (see Cholecalciferol)   |        |       |
| Vitamin E (see Cod Liver and Fish Liver oil)  |        |       |
| Vitamin H (see a-Tocopherol and Wheat germ oil)   |        |       |
| Vitamin H (see Biotin)  |        |       |
| Violet methyl toner (see Methyl violet toner)   |        |       |
| <b>W</b>  |        |       |
| Warrent 0.5% cream, tanks, f.o.b. Ind. bulk, Chicago  | 75     | -     |
| Wheat germ oil, cold-pressed, cold-processed  | 18.50  | 17.50 |
| cold-processed  | 14.00  | -     |
| White precipitate, USP, powd., 100-lb. lots, f.o.b. works   | 7.992  | 11.2  |
| Whiting (see Gadus morhua)  |        |       |
| Wintgreen oil, syn. (see Methyl salicylate)   |        |       |
| Witch hazel bark, bla.  | 1.35   | -     |
| fms.  | 1.76   | -     |
| 400-mesh, bgs., c.f. works  | 134.00 | -     |
| 325-mesh, bgs., c.f. works  | 117.00 | -     |
| High aspect ratio, bgs., works  | 194.00 | -     |
| Wollastonite, f.f., f.o.b., producing plant, Central carbide  | 200.00 | -     |
| 325 mesh  | 140.00 | 141.0 |
| 400 mesh  | 160.00 | -     |
| 100 mesh  | 180.00 | -     |
| Wood grease, USP (see Lanolin)  |        |       |
| Warmwood oil (see Chenopodium oil, NF)  |        |       |
| Warmwood oil, cns.  | 31.00  | -     |
| <b>X</b>  |        |       |
| Xanthan gum, food 300-lb. dms., f.o.b. works  | 6.95   | 6.2   |

|  |      |      |
|--|------|------|
| Xylene, petroleum, ind. or nitrated, tanks |      |      |
| Affence, La., l.o.b.                       | gal. | .76% |
| Atlanta, Ga., divd.                        | gal. | .76% |
| Beyonne, N.J., divd.                       | gal. | .76% |
| Beyonne, N.J. l.o.b.                       | gal. | .76% |
| Baytown, Tex., l.o.b.                      | gal. | .76% |
| Chicago, Ill., divd.                       | gal. | .76% |
| Claiborne, Pa.                             | gal. | .76% |
| Fl. Weine, Ind.                            | gal. | .76% |
| Oulf Coast, spol. barges                   | gal. | .76% |
| Houston, Tex., divd.                       | gal. | .76% |
| New Jersey Marine, divd.                   | gal. | .76% |
| Xylene, petroleum, ind. or nitrated, tanks |      |      |
| Philadelphia, Pa., divd.                   | gal. | 1.36 |
| Providence, R.I., divd.                    | gal. | 1.42 |
| South Bend, Ind., l.o.b.                   | gal. | 1.37 |
| m-Xylene, high purity, tanks, l.o.b.       |      |      |
| Texas City, Tex.                           | lb.  | .38  |
| c-Xylene, tanks, works                     | lb.  | .13% |
| p-Xylene, tanks, works                     | lb.  | .19  |
| m-Xylenedimrns, divd. II, l.o.b.           |      |      |
| works                                      | lb.  | 1.70 |
| 2,4-Xyldne, tech. liq. c.i. II l.o.b.      |      |      |
| works                                      | lb.  | 1.60 |
| xylidines, mixed, o,p,m,dm, c.i. I, l.o.b. |      |      |
| l.o.b. works                               | lb.  | 1.50 |

|  |     |            |
|--|-----|------------|
| Yara yara, 25-lb. cns.                   |     | 2.51       |
| Yarso, pure brewer's debittered, NF Sec- |     |            |
| champs, NF, divd.                        | lb. | 1.10       |
| Yarso, sante leaves, bds.                | lb. | 2.40       |
| extra, bolts                             | lb. | 26.50 3175 |
| Yang-lyng oil, extra grade               | lb. | 36.50      |
| grade 1                                  | lb. | 25.00      |
| grade 2                                  | lb. | 26.00      |
| grade 3                                  | lb. | 22.00      |

|   |          |               |
|---|----------|---------------|
| Z   |          |               |
| Zeln, bgs., 2,000-lb lots.  | lb.      | 7.50 530      |
| Zinc acetate, NF, dms.  | lb.      | 1.00 178      |
| tech. drydrene, bgs., 1 lb. works, lb.  |          | 1.55          |
| Zinc borate, tech., 43% ZnO, 37% B <sub>2</sub> O <sub>3</sub> , 50-lb. bgs., 20,000-lb. II, l.o.b. works |          | .55           |
| crysl., 37% ZnO, 49% B <sub>2</sub> O <sub>3</sub> , 350-lb. bgs., 20,000-lb. II, l.o.b. works            |          | .86           |
| Zinc chloride, USP, gran., dms., l.o.b.   |          | 6.78          |
| Zinc chloride, tech., same, 50%, tanks, l.o.b. Cleveland  |          |               |
| Ohio  | 100 lbs. | 20.20         |
| Concord, N.C.   | 100 lbs. | 20.20         |
| Fresport, Tex.  | 100 lbs. | 20.20         |
| Old Bridge, N.J.  | 100 lbs. | 20.20         |
| 85 degree, same   | 100 lbs. | 27.50         |
| Ohio  | 100 lbs. | 27.50         |
| Concord, N.C.   | 100 lbs. | 27.50         |
| Old Bridge, N.J.  | 100 lbs. | 27.50         |
| 70 degree, same basis Cleveland   |          |               |
| Ohio  | 100 lbs. | 29.70         |
| Concord, NC   | 100 lbs. | 29.70         |
| Old Bridge, NJ  | 100 lbs. | 29.70         |
| 72 degree, same basis Cleveland   |          |               |
| Ohio  | 100 lbs. | 33.20         |
| Concord, NC   | 100 lbs. | 33.20         |
| Old Bridge, NJ  | 100 lbs. | 33.20         |
| Zinc chromite, tech.  | lb.      | 1.12          |
| Zinc cyanide, dm, c.i.  | lb.      | 1.65 214      |
| Zinc fulminate type 1 & 2, dms., c.i.   |          |               |
| Zn, lb. plant.  | lb.      | 59 .67        |
| Zinc ethylenediamine tetraacetate acid  |          |               |
| 64% Zn, ammonio salt soln., t.c., l.l.  |          |               |
| 9% Zn, ammonio salt soln., t.c., l.l.   |          |               |
| l.o.b. works  | lb.      | .48           |
| Zinc fluoborate, tech., conc., l.o.b.   |          |               |
| works, trt. equat.  | lb.      | .88           |
| Zinc metal, high grade, divd.   | lb.      | .47 .50       |
| Zinc naphthenate, liq. 8% Zn, dms., divd  |          |               |
| Zinc nitrate, tech., 30% ZnO, 70% H <sub>2</sub> O  | lb.      | .34 .36       |
| Zinc oxide photo conducting, bgs., c.i., trt. acid.   |          |               |
| Zinc oxide, USP 80-lb. box, c.i., trt. acid.  | lb.      | .59 .65       |
| Zincochrome pigment, American process lead-free, bgs., c.i., trt. acid.                                   |          |               |
| Zinc oxide pigment, French process lead-free, bgs., c.i., trt. acid.                                      |          |               |
| Zinc phenolphthalein, purif., gran., 250-lb. cns., l.l., trt. acid.                                       |          |               |
| Zinc pyridinedione, 50% depnd., c.i.  |          |               |
| works, l.o.b. works   | lb.      | 6.80 8.80     |
| Industrial grade  | lb.      | 14.50         |
| Zinc resinate prep., 7.2-7.8% Zn, dms., trt. acid.  |          |               |
| Zinc stearate, dm, c.i., l.l.   |          |               |
| works, trt. acid.   | lb.      | .17 280       |
| Zinc sulfate, USP, bulk, II   | lb.      | .92 108       |
| Zinc sulfide, dm, c.i., l.l.  |          |               |
| 200-lb. cns., trt. acid.  | lb.      | 185.00 177.00 |
| Zircon flour, bgs., bulk c.i., works, ton   |          |               |
| Zircon milled bgs., 200 and 350 lb. works, l.o.b.   |          |               |
| Zirconium acetate soln., 20% ZnO, trt. acid   |          |               |
| c.i., 30,000-lbs min., works  | lb.      | .97           |
| 22% ZrO <sub>2</sub> bgs., l.l.   | lb.      | .78           |
| Zirconium hydride, conc., electronic grade, dm, works   |          |               |
| Zirconium oxide, powd., conc., dms., 2,000 lbs. min.  |          |               |
| electronic same   | lb.      | 4.26          |
| insulating, stabilized, 326°F same basis  | lb.      | 7.35          |
| unstable, 326°F same basis  | lb.      | 3.31 3.82     |
| dense, stabilized, 50°F, same basis   | lb.      | 9.55 9.76     |
| Zirconium oxychloride, liq., cns.   | lb.      | .91 1.04      |

# CHEMICAL IMPORTS

US imports of chemicals and related materials are reported in this section by  
CPI material. Listings include consignee where possible, container, net weight  
name of vessel (in parenthesis), port of origin and date of shipment's arrival  
at the Port of Newark.

US chemical imports/exports are tabulated monthly in the market report

[illegible]

DIMONIUM OXIDE 432 dms (47618 lbs) (Oine S) Antwerp, 11/18.  
 DIUM CARBONATE Oceanic Shpg 44 ptt (80601 lbs) (Xiang He) Kobe, 11/6.  
 M Royal 4820 ppg (246375 lbs) (American New Jersey) Antwerp, 11/13.  
 LORPAC 1000 1000 gms (2290 lbs) (Zan 1200 lbs) (Ever Darun) Antwerp, 11/15.  
 MPHOR POWDER SYNTHETIC 1000 cin (66826 lbs) (Chao He) Shanghai, 11/6.  
 PRYLIC ACID Rebeco Chemicals 80 dms (36808 lbs) (Ever Corbus) Antwerp, 11/15.  
 YLON GRIPE STEMS Scott Food Products 167 bgs (11381 lbs) (Jebel Ali Dubai, 11/11.  
 AMOMILLE Ecce Freight Supplies 200 cin (1102 lbs) (American) Leghorn, 11/18.  
 LORAC 1000 1000 gms (2290 lbs) (Zan 1200 lbs) (Ever Darun) Antwerp, 11/15.  
 LORINE DRY BLEACH 80000 DILU Olin Chemicals 118 dms (34079 lbs) (Gins S) Faskoto, 11/18.  
 LORAC ACETIC ACID SOLIO Lactosol 440 dms (13906 lbs) (Ever Corbus) Antwerp, 11/15.  
 220 dms (88446 lbs) (Stuttgart Express) Antwerp, 11/11.  
 LOROPROPAMIDE Pfizer 1 dms (75 lbs) (Bridgewater) Zaeburg, 11/9.  
 DYNAMIC ALKALINE FLAKES White Cross Laboratories 350 dms (14135 lbs) (Carmen Carina) Dania, 11/17.  
 NNAMIC ALDEHYDE PERFUME Chemical Dynamics 78 dms (14842 lbs) (Oline S) Antwerp, 11/6.  
 NNAMON LEAF Oil Polarsol Alg & dms (3501 lbs) (Jebel Ali) Dubai, 11/11.  
 TRIC ACID Omnitrans 1400 bgs (78991 lbs) (Hreijn) Koper, 11/18.  
 1400 1400 bgs (78991 lbs) (Husum) Hamburg, 11/17.  
 1182 bgs (122223 lbs) (Ever Corbus) Antwerp, 11/15.  
 GPI 800 bgs (80000 lbs) (Zim Montreil) Haiti, 11/12.  
 TRONELLA Oil Berel Shpg 28 dms (12531 lbs) (Neddylog Cement) Nagoya, 11/15.  
 1182 bgs (122223 lbs) (Neddylog Cement) Nagoya, 11/15.  
 CONDUIT FATTY ACID XORTACIO Roteco Chemicals 1 ink (38993 lbs) (Ever Dardun) Rotterdam, 11/10.  
 CONDUIT 1000 1 bks (1120000 lbs) (Northern Puma) Gins, 11/10.  
 2 bks (224000 lbs) (Northern Puma) Zamboanga, 11/18.  
 1 bks (1120000 lbs) (Stoll Falcon) Oingoog, 11/24.  
 2 bks (2240000 lbs) (Stoll Falcon) Jingni, 11/24.  
 LOLO PRESSED LEMON Oil Citrus & Allied Essences 10 dms (4289 lbs) (Columbus America) Melbourne, 11/11.  
 JUMIN SEED Gel Spice 430 bgs (52139 lbs) (Jebel Ali) Dubai, 11/11.  
 JUMIN SEEDS Miltzer & Muech 400 bgs (48501 lbs) (Numburg Express) Antwerp, 11/15.  
 JUMIN SEEDS Sepep Trdg 860 bgs (104278 lbs) (Arid) Maserik) Dubai, 11/15.  
 YANO ETHYL METHYL AMINO 74 dms (24348 lbs) (Numburg Express) Antwerp, 11/15.  
 YANO ETHYL METHYL AMINO 74 dms (24348 lbs) (Numburg Express) Antwerp, 11/15.  
 EXTRINE 800 bgs (44533 lbs) (Ever Dardun) Rotterdam, 11/10.  
 ACETON ALCOHOL Slase 1 ink (44379 lbs) (Arid) Maserik) Dubai, 11/15.  
 AMINODIPHENYLMETHANE Resin Mobay Chemical 180 dms (38096 lbs) (Guttagr Express) Rotterdam, 11/11.  
 BUTYL LITHIUM OXIDE Loxden Chemicals Expeditors 120 dms (26045 lbs) (Xiang He) Kobe, 11/6.  
 BUTYLAMINE 1 ink (3787 lbs) (Cine S) Antwerp, 11/18.  
 NICHLOROBENZYL CHLORIDE 16 bbs (8841 lbs) (Neddylog Cement) Tokyo, 11/15.  
 NICHLOROBENZYL CHLORIDE 16 bbs (8841 lbs) (Neddylog Cement) Tokyo, 11/15.  
 NICYANIDAMIDE 1800 bgs (88586 lbs) (Husum) Rotterdam, 11/17.  
 NICYANIDAMIDE HARMLESS Ben Shpg 1800 bgs (88586 lbs) (Tadokus Koetschik) Bremenham, 11/20.  
 NIETHYL PHTHALATE BASF K & F 73 dms (39812 lbs) (Numburg Express) Antwerp, 11/15.  
 NIETHYL PHTHALATE BASF K & F 73 dms (39812 lbs) (Numburg Express) Antwerp, 11/15.  
 DIMER ACID 5 dms (0 lbs) (Ever Dardun) Rotterdam, 11/10.  
 NIETHYL CARBONATE SNPE 40 dms (18468 lbs) (Sea Land Pioneer) Algiers, 11/15.  
 DIPENTARYTRITROL 800 bgs (85978 lbs) (Ming Ocean) Yokohama, 11/18.  
 PHENYLAMINE 1 con (40522 lbs) (Numburg Express) Antwerp, 11/15.  
 DIPYRROLONE Chemicals China 40 dms (2880 lbs) (American New Jersey) Hong Kong, 11/13.  
 ETHANOL Whitehead 4 con (149878 lbs) (Stuttgart Express) Gremock, 11/13.  
 ETHYL CHLORIDE SNPE 80 dms (35450 lbs) (Sea Land Pioneer) Algiers, 11/15.  
 ETHYLALUMINUMCHLORIDE Sherex Chemicals 1 lot (31878 lbs) (American Aquatic) Sympherham, 11/18.  
 EUCAPILOT Inc Customs Service 11 dms (8020 lbs) (Columbus Queensland) Sydney, 11/18.  
 FERRUS SULFATE 820 dms (26014 lbs) (Ever Genu) Hamburg, 11/15.  
 FERRUS SULFATE 820 dms (26014 lbs) (Ever Genu) Hamburg, 11/15.  
 FIBER TRIM WITH CALCIUM Radco Group ink 4092 cin (44301 lbs) (Dard Contierino) Bremenham, 11/18.  
 FIBRE TRIM TABLETS Radco Group ink 4092 cin (44301 lbs) (Dard Contierino) Bremenham, 11/18.  
 FIBRE TRIM TABLETS Radco Group ink 4092 cin (44301 lbs) (Dard Contierino) Bremenham, 11/18.

DOL 70 lbs (32696 lbs) (Stuttgart Express) Hamburg, 11/11.

DISCONTINUED Transport 8 Pbc 2bs (35767 lbs) (Buttgen Express) Bremenhaven, 11/11.

FREEDOM BENZENE Phone Polymers 2 bcs (12678 lba) (Freedom Ben) Cts, 11/14.

FRODOCARBON F 112 Nalgene America 50 dms (36286 lbs) (Frodo Carbon) Koba, 11/16.

GALACTIC ALCOHOL 1 lb (Nurnberg Dorrer) 1 bks (180477 lbf) (Martha A.) Rotterdam, 11/11.

GASTRINE BUS Anchor 8 dms (4588 lbs) (Nurnberg Express) Oremook, 11/15.

GEMMA 100 lbs 176 dms (41517 lbs) (Zim California) Osaka, 11/17.

GER Fritzsche Dodge & Cliscott 782 bags (41491 lbs) (Ever Gerdien) Falkenstein, 11/10.

GLASS 25 ctn (2434 lbs) (Vahse Pantan) Algeiras, 11/16.

GNER OLEOPRESIN 2 tns (883 lbs) (Vahse Pantan) Algeira, 11/15.

GNEUR Multi Truck 900 lbs (780 lbs) (Ming Ocean) Hong Kong, 11/17.

GONATE Series Laboratory 63 dms (4810 lbs) (Buttgen Express) Hamburg, 11/11.

GOSELA Freightline 1280 cs (33345 lbs) (Humant) Rotterdam, 11/17.

CERIN HARMLESS Trans World Shpg 5 tnk (248186 lbs) (Humant) Hamburg, 11/17.

OXYLIC Acid 88 dms (41204 lbs) (Tedeusz Kosciusko) Lefevre, 11/20.

GRD COIL UHL Line 30 brt (13757 lbs) (Olin) Ever Green, 11/16.

PEFFRUIT Oil City Bank 12 pkg (6070 lbs) (Zim Mont-real) Haiti, 11/12.

ZIM 25 CS 253 lbs (Algebra) Manila, 11/23.

JABEL ABU Ouseid, 11/11.

60 lbs (40584 lbs) (Vahse Pantan) Algeiras, 11/16.

SUND OREGANO Darkes Foodma 1102 bags (22446 lbs) (Sund Oregano) Yokohama, 11/16.

OUN BREASAND SEED New York Mutual Trg Co Inc (0 lbs) (Ming Ocean) Yokohama, 11/16.

IACOLD Rhone Poulenc 78 dms (37827 lbs) (Arid) Osaka, 11/17.

AR OUM The Courts 700 bags (36787 lbs) (Liberty) Valencia, 11/11.

M

CIO Nagasa America 500 bags (280322 lbs) (Ming Ocean) Yokohama, 11/16.

KAMETHYLYLAL UHL Lines 7 dms (2562 lbs) (Ever Green) Hamburg, 11/15.

XANOL Monsanto 1 bks (1102300 lbs) (Stephanio) Hamburg, 11/13.

XYLINE S.P.O.I 1 tnk (44577 lbs) (Ona S) Falkenstein, 11/16.

DRATED D HYDRAZONE 80 dms (67434 lbs) (Liberty) Ft. 11/11.

OROFUDRIC acid BDP intl 138 dms (73458 lbs) (Zim) Osaka, 11/17.

DROGEN CHLOIDE Metheson Das Products 111 cyl (1213 lbs) (Columbus O Unenst) Sydney, 11/16.

DROEN SULPHIO Metheson Das Products 38 cyl (4148 lbs) (Columbus O Unenst) Sydney, 11/16.

DROEVALLED CASTOR oil 2000 bags (105358 lbs) (Punta Anctar) Santos, 11/23.

United Calatania 800 bags (42028 lbs) (Punta Anctar) Santos, 11/23.

DPROX DRUGWELL BASF K & F 78 dms (32591 lbs) (Numburg Express) Antwerp, 11/15.

DROXY QUINOINE Maag Agrochemicals 210 dms (24816 lbs) (Ona S) Lefevre, 11/16.

DROXYQUINYL CLYCINE Baschm 182 ctn (18856 lbs) (American Chemicals) Falkenstein, 11/13.

ROXYZYNE HCL HARMLESS UHL Lines 22 dms (2668 lbs) (Ever Ocean) Hamburg, 11/15.

DROXYQUINOLONE FAIR HARMLESS UHL Lines 3 dms (271 lbs) (Ever Ocean) Hamburg, 11/15.

ULIN ERS Squibb & Sons 20 pgs (205125 lbs) (Sea Land Voyager) Bremenhaven, 11/18.

BORNELD Brodie Sawyer 44 dms (44550 lbs) (Jebel Ali) Hamburg, 11/16.

DOBUTYL METHACRYLATE 72 dms (32540 lbs) (Orst Continent) Falkenstein, 11/15.

OPROPYL NITRATE Arrol Fordium 80 dms (41878 lbs) (Nurnberg Express) Falkenstein, 11/15.

COSTEARIC ACID COSMOARE Alozo 78 dms (34048 lbs) (Ever Gerdien) Rotterdam, 11/10.

ACID DRY Chel Deloy 160 dms (38095 lbs) (Nurnburg Express) Hamburg, 11/15.

N

ABSPARTIC Acid Ajinomoto 40 dms (71426 lbs) (Ever Ocean) Lefevre, 11/15.

PPO 74 (7428 lbs) (Ever Gerdien) Lehavne, 11/10.

EPPHREDRIH HCL Genacrine 80 ctn (4638 lbs) (Genacrine) Hong Kong, 11/20.

ACTOSEFIN XVQCL 21 Votainer Consolidation Serv 24 dms (2813 lbs) (Buttgen Express) Rotterdam, 11/11.

ANNION Oil 234 dms (109798 lbs) (Zim California) Osaka, 11/17.

AIVANDINI 22 dms (10888 lbs) (Zim Montreal) Barcelona, 11/12.

BEAR ALCOHOL UHL Lines 3 pxb (0 lbs) (Ever Gerdien) Hamburg, 11/10.

BEAF ALCOHOL Milad 10 dms (4012 lbs) (Vahse Ocean) Kobe, 11/16.

MONK GRASS Oil 20 dms (8778 lbs) (San Pedro) Palma, 11/16.

MEMON Oil 38 dms (18923 lbs) (Zim Montreal) Santa Fe, 11/12.

H WITS 15 dms (6348 lbs) (Punta Anctar) Bahia, 11/23.

Fltra 6 dms (2608 lbs) (May No 16) Geneva, 11/22.

EMONGRASS Oil Polarmine Mig 25 dms (11001 lbs) (Blumstein) Rio Tonnes, 11/17.

ITHALITE POLYMERS ORANULES Foote Mineral 1680 bags (44992 lbs) (CGNI Antierco) Antofagasta, 11/17.

TOTUSAE LA VINYL ADHEIVE Antikenne Handelen 11 ctn (3827 lbs) (See Land Voyagers) Algeiras, 11/15.

CUISA CUBELA Oil 48 dms (18770 lbs) (Chao He) Shanghai, 11/18.

OCUST BEAN OIL Polypro Ind 800 bags (44082 lbs) (See Land Voyagers) Rotterdam, 11/15.

NAGARBONI CHLORIDE Polish Import & Chemikal 1280 bps (128818 lbs) (Sea Land Voyager) Bremenhaven, 11/16.

400 CS 103344 lbs (Buttgen Express) Bremenhaven, 11/11.

MAGNESIUM OXIDE Total Port Colongme 320 dms (67892 lbs) (Yang He) Kobe, 11/15.

ROASEPT PASTE Polarmine Mig Prod 82 dms (78910 lbs) (Polarmine Mig Ocean) Kobe, 11/16.

MAGNESIUM SULPHATE ANHYDROUS Polish Import & Chemikal 400 bps (40334 lbs) (Buttgen Express) Bremenhaven, 11/11.

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# CHEMICAL PROFILE

## LINEAR ALKYLATE

December 15, 1986

| SUPPLY                          | CAPACITY* |
|---------------------------------|-----------|
| PRODUCER                        |           |
| Monsanto, Carson, Calif.        | 50        |
| Monsanto, Chocolate Bayou, Tex. | 250       |
| Viate, Baltimore, Md.           | 230       |
| Viate, Lake Charles, La.        | 150       |
| Total                           | 680       |

\*Millions of pounds per year of linear alkylate. Monsanto bought the Carson plant from Witco on October 1, 1985. The company also plans a 50-million-pound expansion at Chocolate Bayou which is due on line in late 1988. Viate's Lake Charles plant and Monsanto's Chocolate Bayou facility use a hydrogen fluoride catalytic process, while Carson and Baltimore run on a monochloroparaffin process. Profile last published 10/31/83; this revision 12/15/86.

**DEMAND**  
1985: 550 million pounds; 1986: 565 million pounds; 1990: 635 million pounds (includes exports).

**GROWTH**  
Historical (1975-1985): 0.5 percent per year; future: 3 percent per year through 1990.

**PRICE**  
Historical (1952-1986): High, 47 1/2c. per pound, tank, works; low, 10c. per pound, tank, frt. equal.; Current: 43c. per pound, tanks, works (list price).

**USES**  
Linear alkyl sulfonates (LAS) for household detergents, 74 percent; LAS for industrial cleaners, 15 percent; exports, 10 percent; other, 1 percent.

**STRENGTH**  
Demand has been growing steadily since 1982, due to the rising popularity of high-surfactant liquid laundry detergents, and higher surfactant levels in powdered laundry products as well.

**WEAKNESS**  
A large spate of laundry reformulations in 1980 and 1981 caused a sharp drop in LAS consumption that producers have yet to recover from. Prices have fallen in line with raw material n-paraffins.

**OUTLOOK**  
Most of the penetration by liquid laundry detergents will be complete by 1988 at which point surfactant LAS demand will grow at the rate of population. Monsanto's expansion at Chocolate Bayou will keep supply comfortably in balance with demand. LAS now competes less directly with other surfactants on price, but instead is now used more in conjunction with alcohol ethoxylates and other surfactants to add performance characteristics to a laundry formulation.

# PLATFORM

## Corporate Responsibility

The following remarks are excerpted from an address by William R. Miller, vice-chairman of Bristol-Myers Company before an international conference on private sector initiatives in Paris, France.

Harry Truman, the thirty-third president of the United States, kept two signs on his desk. On the first was a piece of advice from an American author who, like Mr. Truman and for that matter like our current President, Ronald Reagan, was well-known for his down-to-earth wisdom and sense of humor. The author was Mark Twain. Permit me to quote.

"Always do right. This will gratify some people and astonish the rest."

On the second sign was what Mr. Truman would have called a plain fact. It said simply, "The buck stops here."

Those two sentiments for me embody what social responsibility means — accepting that "the buck stops here" for each of us who makes decisions on behalf of organizations such as the company I work for — and accepting the obligation to do right.

...And, just as importantly, to do right by the future we face together, by continuing and intensifying our efforts to innovate with new products that will truly make a positive difference in the lives of people throughout the world.

...Partly because of the efforts of the pharmaceutical industry, and partly because of the efforts of governments and international organizations to improve distribution, more people are receiving more and better health care than ever before in history. Nevertheless, health care remains inadequate for many millions of people. Much more needs to be done. Yet, the steadily rising cost of health care is making it less and less affordable and therefore potentially less widely available. This tragic statement is true of even the richest countries, and I know of no country that is not actively seeking ways to contain these expenses.

In the drive for cost containment, what may be lost sight of is that few if any methods of reducing health care costs are more effective and at the same time more socially responsible than prescription drugs. Cardiovascular drugs have eliminated the need for thousands of expensive heart bypass operations. Psychotropic drugs have reduced the average stay in mental hospitals significantly. Vaccines now prevent diseases, such as polio, whose costs once were devastating. Because of antibiotics, diseases like tuberculosis, which once required long-term hospitalization, now can be treated at home.

Cost-cutting... better organization of the health care system... more efficient use of resources... reforms like these can accomplish only so much. What is needed even more are advances: innovations which reduce the

cost of health care in the most effective way of all — by reducing the need for it.

I repeat: only by reducing the need for health care can we possibly hope to make it available throughout the world at a cost the world can bear. This applies to the United States. It applies to France. And it applies even more strongly to most other countries, especially those of the developing world.

...Our industry also is in the forefront of support of basic research throughout the world to discover and understand the essential mechanisms of the disease process. Bristol-Myers Company itself has provided a string-attached grants in support of basic research in cancer, nutrition, and orthopaedics totalling more than \$13 million. And other companies are providing funding in other areas of basic research.

Meanwhile, whenever devastation strikes localities where we do business, it is the practice of pharmaceutical companies to make generous gifts of antibiotics and other life-saving drugs. Some recent examples include the Mexican earthquake and the mud slides in Puerto Rico.

In these acts of social responsibility, our industry is of course far from unique. Other companies and industries also give generously... to hospitals and other health care institutions... to a wide variety of charitable, educational, cultural, and scientific organizations... and to the universities, museums and institutions of the performing arts which express and preserve the essence of our civilization.

As an Englishman representing an American industry, with a perspective that reflects what I have experienced on both sides of the ocean, I remain convinced that — whether we are talking about the pharmaceutical industry or most other industries — being a profitable company in itself can be socially responsible corporate act. Only a profitable company can employ people, provide them with income, benefits and a secure future. Only a profitable company can share its good fortune with society and with the communities of which it is a part.

Clearly, the examples of corporate social responsibility I tend to cite relate closely to my own industry. Pharmaceutical companies innately want to prevent disease, just as I am sure that food companies innately want to prevent hunger. Thus, we support research into the basic mechanisms of the disease process, and food manufacturers support research on new food crops and ways to nourish them that may help alleviate hunger in the developing world.

Companies are likely to practice social responsibility most effectively when it extends logically from their everyday functioning as businesses. The seed from which corporate social responsibility germinates is the ability to make a profit. Companies with marginal incomes, like families with marginal incomes, have no choice but to follow the doctrine that charity begins at home.

# JOBS & PEOPLE

## Aristech Executives Take Over New Firm

Following the transfer of USS Chemicals Division to Aristech Chemical Corporation, Thomas Marshall has assumed the title of chairman and chief executive officer of Aristech and Craig R. Andersson has become president and chief operating officer.

Mr. Marshall was formerly president of the US Diversified Group of USX Corporation and Mr. Andersson was previously president of USS Chemicals.

Mr. Marshall said Aristech "will continue to manufacture and market the same wide range of chemicals and polymers as did USS Chemicals."

Jack Macaulis, who has been named president and chief executive officer of Procomp, Inc., a Tulsa, Okla.-based specialty chemicals firm, was named last year by Eke Chemicals, Inc. and E.I. du Pont de Nemours & Co. to market proprietary chemical systems to the paper industry.

John H. SPURR has been named chairman and international lead zinc research organization. IAN T. KIDEYS has been appointed sales representative for Virginia Chemicals Inc., responsible for Southern California, Arizona and New Mexico. LYLE E. MCNALLY has been named director of marketing at Fisons Corporation.

MAURICE J. HILLER has been named director of licensing for the Business Development Group of Ayerst Laboratories. MICHAEL E. ECKARDT has been appointed sales representative covering West Atlanta and South Georgia for ChemCentral Corporation. DONNA B. HARMAN has been named director of investor relations in the corporate financial communications department of Monsanto Company.

K.H. Spurr  
I.T. Kideys

T. Marshall  
C. Andersson

GLEN O'CONNOR has been appointed sales representative in the Adhesives Division of National Starch & Chemical Corporation. GASTON CEVALLOS has been named manager of finance for Dow Chemical Europe.

K.M. McNally  
A.J. Hiller

DONALD H. DECLERCK has been appointed director of quality assurance at Pfauller Company. BAL K. DUBEY has been named manager of commercial development for coll coatings at Akzo Coatings American Inc. DR. ROMEO RONCUCCI has

been appointed vice-president of research and development at Eubank, Tenn. JOHN R. HARKNESS has been named Canadian sales development manager for the pulp and paper industry at the Newport Division of Reichhold Chemicals Inc. FRANK LICHTENBERGER has been appointed general manager of the Color Division of H. Kohnstamm & Co. Inc. ROBERT DENNIS has been appointed sales representative for SCM Pigments. GARY B. SEAVEY has been named Southeast regional sales manager at Chemfix Technologies Inc. PHILIP N. BALDWIN JR. has been appointed Midwest regional sales manager and ARTHUR BUESING has been named Northeast regional sales manager. STEPHEN J. KLESTINEC has been named quality assurance manager in Georgia.

William L. Fegley, who has been appointed business counsel for Dow Chemical Company. He was most recently associate business counselor in the company's innovation development department.

been appointed vice-president of research and development at Eubank, Tenn.

JOHN R. HARKNESS has been named Canadian sales development manager for the pulp and paper industry at the Newport Division of Reichhold Chemicals Inc. FRANK LICHTENBERGER has been appointed general manager of the Color Division of H. Kohnstamm & Co. Inc. ROBERT DENNIS has been appointed sales representative for SCM Pigments.

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STEPHEN J. KLESTINEC has been named quality assurance manager in Georgia.

M.B. Eckardt  
D.B. Harman

## Bio-Lab, Inc. Appoints Manager, Sales Rep

Bio-Lab, Inc. has appointed Steve Carlyle to the newly created position of market development manager and Michael J. Roas technical sales representative for the company's BioGuard Swimming Pool and Spa Division.

Mr. Carlyle will be responsible for researching and defining market opportunities and will report to the director of commercial development.

Mr. Roas, a 16-year veteran of the pool industry, joins Bio-Lab Inc. from a company in Tustin, Calif., and will cover a seven county area in greater Los Angeles.

Steve Carlyle  
Mike Roas

Pacific Corporation's Chemical Division, ABU AHMAD has joined the company as new business/process research and development manager at the firm's Decatur, Ga., laboratory, and J. MICHAEL ROBERTS has been

G. O'Connor  
G. Cevallos

named research and development manager for thermosetting resins (Eastern region). SHELDON NATOWSKY has been appointed marketing manager for stimulation additives in the Oil Field Chemical Division of ChemLink Petroleum Inc.

# MEETINGS CALENDAR

December 15, 1986

## THIS WEEK

NORTHEASTERN CHEMICAL ASSOCIATION, annual December luncheon, New York Athletic Club, New York, December 18.  
SALES ASSOCIATION OF THE CHEMICAL INDUSTRY, annual Christmas party, New York Hilton Hotel, New York, December 18; education committee, seminar, "The Psychology of Selling," Treadway Inc., Saddle Brook, N.J., December 18.

## JANUARY

CHEMICAL INDUSTRY ASSOCIATION, luncheon meeting, Parker Meriden Hotel, New York, January 22.  
COMMERCIAL DEVELOPMENT ASSOCIATION, 8th annual industrial commercial development course, with Dwight Marketing Services, Inc., Sheraton Center Hotel, New York, January 26-28.  
SOAP AND DETERGENT ASSOCIATION, 60th Annual Meeting and Industry Convention, Boca Raton Hotel and Club, Boca Raton, Fla., January 28-February 1, 1987.

## LATER ON

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, center for chemical process safety, international conference on chemical safety issues, Omni Shoreham Hotel, Washington, D.C., February 5-6.

AMERICAN PETROLEUM INSTITUTE, 12th world petroleum congress, international forum for exchange of technical information about the petroleum industry, Houston, Tex., April 28-May 1.

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS, 12th annual Spring workshop and exhibition, Skyline Ottawa Hotel, Ottawa, Ontario, Canada, April 27-30.

CHEMICAL GROUP OF NATIONAL ASSOCIATION OF PURCHASING MANAGERS, mid-winter conference, "Purchasing — Opportunity in a Changing World," Seton Village Hilton Hotel, Baton Rouge, La., February 18-20.

CHEMICAL MARKETING RESEARCH ASSOCIATION, Houston Meeting: "The US Chemical Industry Responding to Change," Westin Galleria Hotel, Houston, Tex., February 4-6, 1987.

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, 73rd mid-year meeting, Chicago Marriott Hotel, Chicago, Ill., April 28-29.

CHINACHEM '87, international exhibition on chemical and petrochemical industries, China International Exhibition Center, Beijing, China, April 3-8.

CHLORINE INSTITUTE, winter meeting, Mayflower Hotel, Washington, D.C., March 15-19.

CRUG, CHEMICAL & ALLIED TRADES ASSOCIATION, 81st annual dinner, Waldorf-Astoria Hotel, New York, March 19; Spring luncheon, Sheraton Center Hotel, New York, N.Y., June 11.

FERTILIZER INSTITUTE, 1987 annual meeting, Marriott Orlando World Center, Orlando, Fla., February 1-3.  
FIRE RETARDANT CHEMICALS ASSOCIATION, international conference on flame retardancy and fire safety, Sheraton New Orleans Hotel, New Orleans, La., March 22-25.

INSTITUTE OF GAS TECHNOLOGY, 11th annual symposium on energy from biomass and wastes, Hotel Royal Plaza, Wall Disney World Center, Buena Vista, Fla., February 2-6.

INTER-SOCIETY COLOR COUNCIL, scientific conference, Williamsburg Lodge, Williamsburg, Va., February 8-11.

NATIONAL PETROLEUM REFINERS ASSOCIATION, 85th annual meeting, Convention Center, San Antonio, Tex., March 28-31; 12th international petrochemical conference, Convention Center, San Antonio, Tex., April 5-7.

POLYURETHANE MANUFACTURERS ASSOCIATION, Spring meeting, commercial development of new castable systems, Fairmont Hotel, Dallas, Tex., April 26-29.

SOCIETY OF THE PLASTICS INDUSTRY, 42nd annual conference of the reinforced plastics and composites institute, Cincinnati Convention & Exhibition Center, Cincinnati, Ohio, February 2-6; vinyl formulators division, 8th annual technical meeting and conference, Degrin Hilton Hotel, Dallas, Tex., April 6-10.

THE FERTILIZER INSTITUTE, 1987 Annual Meeting Sheraton Orlando World Center, Orlando, Fla., February 1-3, 1987.

# BUSINESS BRIEFS

PRODUCTS & Chemicals Inc. has introduced a waterborne vinyl chloride polymer latex to provide the properties of solvent-borne products. The new emulsion, "Arlux" 7522 DEV, is designed for use in flexible packaging and coating applications. The emulsion complies with FDA requirements for food packaging use. Air Products says.

ALCO CHEMICAL Corporation has introduced two multi-functional aromatic acids, "SODA" and "HTA." The former is a polymer building block offering improved tensile strength and dimensional stability for polyester/urethane films and fibers and the latter is an intermediate for fire resistant polymers and high-temperature epoxy resins, according to Pittsburgh, Kan.-based

AMERICAN CYANAMID Company says its aromatic diisocyanate, "Dipeb," is available in

commercial quantities. The product, meta diisopropenylbenzene, is a reactive intermediate that can perform as a cross-linking agent or as a synthetic building block, Cyanamid says.

BASF GROUP is forming a printing systems operating division, effective January 1, in an effort to consolidate its printing products business and serve the graphic arts industry more efficiently, the company says. The new division will include K&E and Immont printing inks, photopolymer printing plates, color systems for electronic printing processes and resists for the manufacture of printed circuit boards.

BADGER ENGINEERS INC., part of Raytheon Company, has been selected by Shell Oil Company to provide engineering, procurement, and construction services for the rebuilding of a tube oil processing unit. The work, to be completed on a turnkey basis, will

take place at Shell's manufacturing complex at Wood River, Ill. The tube oil facilities had been damaged by fire two years ago.

DUPONT COMPANY'S "Sellar" RB barrier resins are used by Penn Plastics Inc. in the first non-reusable plastic container listed by Underwriters Laboratories for the transportation, storage and use of flammable and combustible liquids. The resin is a specially modified nylon cocarbonate designed to be mixed with polyethylene and molded using proprietary processing technology.

PRODUCTS RESEARCH & Chemical Corporation says it has been granted a US patent on the chemical modification of a class of polymers known as "LP" (liquid polymer). "LP" is a trademark of Morton Thiokol Inc. The resulting new high sulfur polymer, "Permapol LP," is described by Products Research as a major breakthrough in polymer technology, yielding "significantly improved physical properties over standard LP polysulfides."

SQUIBB CORPORATION has begun construction of a new employee services building that will serve as the main visitors' entrance to the company's manufacturing and research and development facilities in New Brunswick, N.J. The 64,000-square-foot building will contain seminar and meeting rooms, offices, an employee store, career center, credit union and a cafeteria office.

STERIVET LABORATORIES, Ontario, Canada, says it has received US Food & Drug Administration approval for "Synacid," a drug developed for the treatment of degenerative joint disease in performance horses. The US market potential for treatments such as "Synacid" is in excess of \$60 million, according to the company.

December 15, 1986